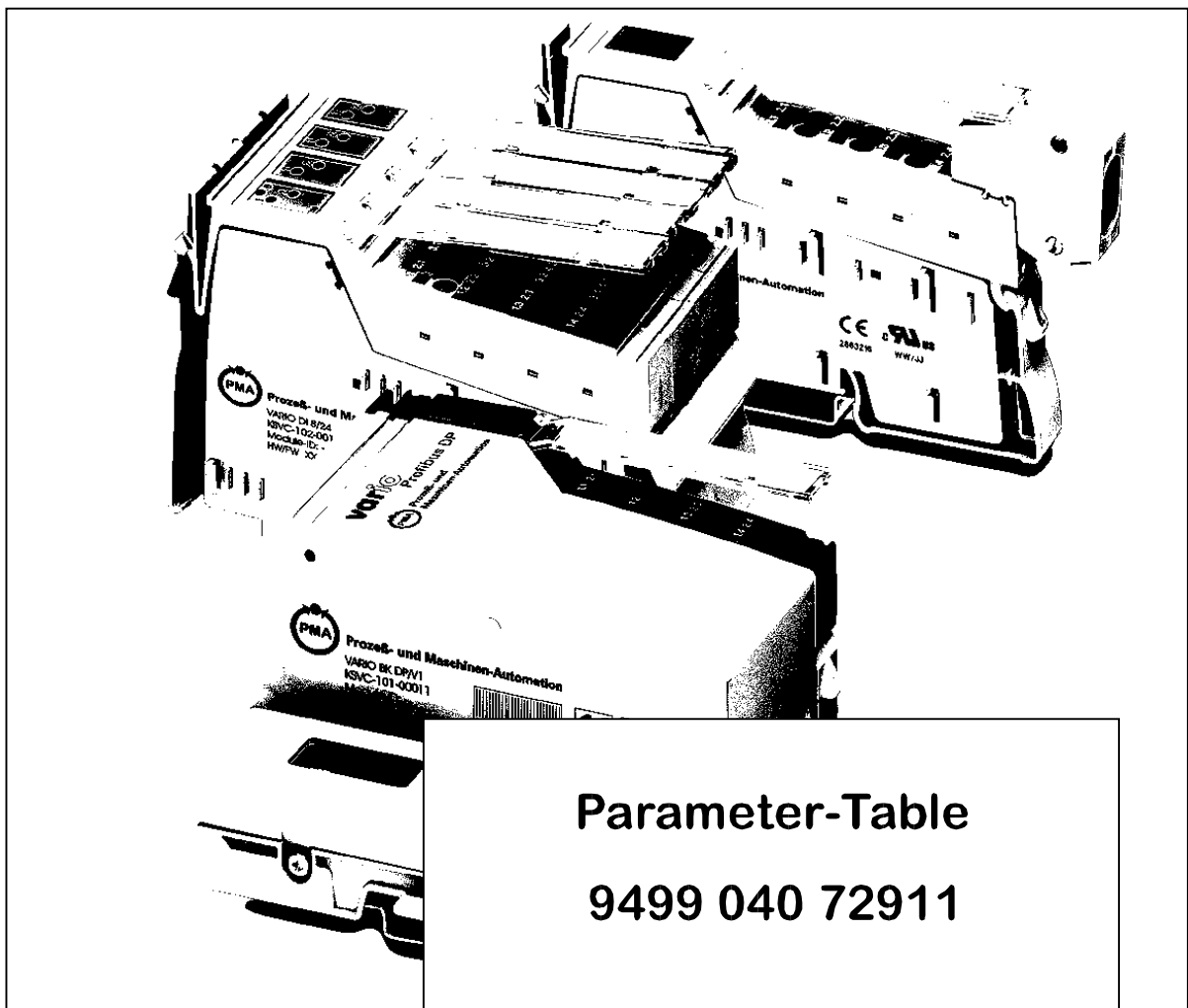


# Modular Controllersystem KS vario



©PMA Prozeß- und Maschinen-Automation GmbH. Printed in Germany  
All rights reserved. No part of this document may be  
reproduced or published in any form or by any means without prior written permission  
by the copyright owner.

A publication of PMA Prozeß- und Maschinen-Automation GmbH

Subject to change without notice

PMA Prozeß- und Maschinen-Automation GmbH  
P.O. Box 31 02 29  
D 34058 Kassel  
Germany

BlueControl ® is a registered trademark of PMA GmbH, Kassel

Restriction of warranty:

No warranty is given for the complete correctness of this manual, since errors can never be avoided completely despite utmost care. Any hints are welcome and gratefully accepted.

## Preface

All data used in the KS vario controller module are listed in this documentation, which is a supplement of **Functional description 9499 040 70511**.

The terms and abbreviations used in the table are explained in this preface.

The table itself was generated as a pdf file automatically from a database by a program, i.e. layout modification (at reasonable expenditure) was not possible.

All data descriptions are structured according to the following principle:

**InP**  
**ConF**

Name	r/w	Adr.		real	Type	Value/off	Description
C.Fnc	r/w	base 1 dP	1155 17539	35078	Enum	Enum_CFnc <input type="checkbox"/>	

**Step 0 To 29 By 512**

1024

With data type **Enum**, a table with a list of valid input possibilities and explanation is given in this position.

**Name:** This column contains the short name of the datum. (The reason for the peculiar form in which the datum is written (upper and lower case) is that it must be possible to indicate these names on a 7-segment display.) The signification of these names is equal with all PMA controllers.

**r/w:** read/write: datum can be read and written.  
r: datum can only be read  
w: datum can only be written

**Adr.:**

**base:** Modbus address (integer) of the datum without position behind the decimal point

**1 dP:** Modbus address (integer) of the datum with 1 digit behind the decimal point

**real:** Modbus address (integer) of the datum in float format

**Typ:** **Float:** (floating point format)

**Int:** (integer = integer number) 16-bit value

**Long:** (integer = integer number) 32-bit value

**Enum:** (enumeration) enumeration of default settings which cause a particular reaction in the controller, or which provide feedback of particular controller status. If this datum is of type **Enum**, all valid entries are listed in a special table.

## Tabular functional-description KS vario

---

The enumeration of an Enum datum need not be in complete succession without gaps. Input of invalid Enums is rejected with an error message (NAK).

**Value/off:** Adjustment range of the datum. An empty box at the top right means that this datum **cannot be de-activated**. A box with a "check mark" means that this datum cannot be **de-activated**.

**Description:** Short description of the datum

**Step 0 To 29 By 512:** The above datum is the 1st value. 29 further values with an address offset of 512 will follow on the addresses listed in "Adr." and "1dP". With addresses in "real", the offset is 1024.

**Legend of abbreviations (in alphabetic order)**

<b>Cntr</b>	<b>Controller</b> Data related to the controller (the control behaviour)
<b>Conf</b>	<b>ConF</b> iguration Data in ConF determine the configuration of the Vario station.
<b>PArA</b>	<b>PArA</b> meter The numeric values of data are determined.
<b>Signal</b>	<b>Signal</b> are data which determine, or provide feedback on the controller status. Signals are written and control the controller, or can only be read and are generated by the controller for status feedback.
<b>HC</b>	<b>Heating C</b> urrent data, which relate to heating current measurement and monitoring
<b>Lim(x)</b>	<b>Limit</b> All values and statuses related to limit value processing are classified in this group.
<b>Inp</b>	<b>Input</b> ; Data related to the inputs
<b>LOGI</b>	<b>LOGI</b> k Data group for control of defined functions of the Vario station via the field bus, via digital inputs, or both.
<b>othr</b>	<b>Other</b> Data, which cannot be classified in the groups listed so far, e.g. bus data.
<b>ohnE</b> <b>ohnE2</b> <b>ohnE3</b> <b>ohnE4</b>	<b>ohnE(...4)</b> (without display) other data structured for internal processing
<b>Out1</b>	<b>Output1</b> Data related to the actual controller outputs 1...30
<b>Out2</b>	<b>Output2</b> Data related to the actual controller outputs 31...60
<b>PAr2</b>	<b>PArA</b> meter set2 This data group includes all data related to the 2nd parameter set.
<b>SamAlar</b>	<b>Sammel Alarm</b> Signal group not only containing alarm messages!
<b>SEtP</b>	<b>Set Point</b> Group of data related to set-point processing
<b>Visual</b>	<b>Visualization</b> , group of data required for visualization



## Table Of Contents

<b>1 Cntr</b>		<b>10 ohnE3</b>	
Con .....	1	Con .....	47
PAr .....	5	PAr .....	49
Signal .....	10	Signal .....	49
<b>2 HC</b>		<b>11 ohnE4</b>	
Con .....	17	Con .....	50
		PAr .....	52
		Signal .....	52
<b>3 InP</b>		<b>12 othr</b>	
Con .....	18	Con .....	53
PAr .....	20	PAr .....	96
Signal .....	21	Signal .....	96
<b>4 Lim1</b>		<b>13 Out1</b>	
Con .....	22	Con .....	101
PAr .....	22	PAr .....	104
Signal .....	23	Signal .....	105
<b>5 Lim2</b>		<b>14 Out2</b>	
Con .....	23	Con .....	106
PAr .....	23	PAr .....	109
Signal .....	24	Signal .....	110
<b>6 Lim3</b>		<b>15 PAr2</b>	
Con .....	24	PAr .....	111
PAr .....	25		
Signal .....	25	<b>16 SamAlar</b>	
		Con .....	112
<b>7 LOGI</b>		Signal .....	128
Con .....	26		
Signal .....	27	<b>17 SEtP</b>	
		Con .....	129
<b>8 ohnE</b>		PAr .....	130
Con .....	28	Signal .....	132
PAr .....	39		
Signal .....	39	<b>18 Visual</b>	
		Signal .....	133
<b>9 ohnE2</b>			
Con .....	43		
PAr .....	46		
Signal .....	46		





**1 Cntr**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description	
Cycle 3	r/w	base 1dP	1154 17538	35076	Enum	<i>Enum_Zyklus</i>	Adjustable cycle time for the channel. Depending on user priority, either more loops or an individual loop can be calculated more quickly. Shorter cycle time for fast loops, e.g. flow. Longer cycle time for slow loops, e.g. room temperature.
Step 0 To 29 By 512 1024						0	Not active
						1	The channel is calculated every 100 ms, together with associated inputs and alarms. The outputs are calculated for every scan (100 ms), independent of the channel cycle time.
						2	The channel is calculated every 200 ms, together with associated inputs and alarms. The outputs are calculated for every scan (100 ms), independent of the channel cycle time.
						3	The channel is calculated every 400 ms, together with associated inputs and alarms. The outputs are calculated for every scan (100 ms), independent of the channel cycle time.
						4	The channel is calculated every 800 ms, together with associated inputs and alarms. The outputs are calculated for every scan (100 ms), independent of the channel cycle time.
						5	The channel is calculated every 1600 ms, together with associated inputs and alarms. The outputs are calculated for every scan (100 ms), independent of the channel cycle time.
						6	The channel is calculated every 3200 ms, together with associated inputs and alarms. The outputs are calculated for every scan (100 ms), independent of the channel cycle time.
C.Fnc	r/w	base 1dP	1155 17539	35078	Enum	<i>Enum_CFnc</i>	Control behaviour (algorithm) referred to output value: e.g. 2- or 3-point controller, signaller, 3-point stepping control.
Step 0 To 29 By 512 1024						0	on/off controller or signaller with one output. The on/off controller or signaller switches if the process value drifts from the setpoint more than the hysteresis.
						1	PID control, e.g. heating, with one output: Switched as a digital output (2-point) or used as an analog output (continuous). PID controllers respond quickly to changes of the control deviation, and typically do not exhibit any permanent control offset.
						2	D / Y / Off, or 2-point controller with partial/full load switch-over. 2 digital outputs: Y1 is the switching output and Y2 is the changeover contact for D/Y.
						3	2 x PID control, e.g. heating/cooling. Two outputs: Switched as a digital output (3-point) or used as an analog output (continuous). PID controllers respond quickly to changes of the control deviation, and typically do not exhibit any permanent control offset.
						4	3-point stepping controller, e.g. for motor actuators. Two digital outputs. No actuating pulses are generated when the process is lined out.

## 1 Cntr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
C.diF	r/w	base 1dP	116935106 17553	Enum	Enum_Cdiff	Effect of derivative time (td) with a PID controller. Derivative time only acts on the measured value or on the control deviation (including setpoint). Selection, whether a powerful response of the PID controller output will only occur with disturbances (changes of the process value) or also after setpoint changes.
<p>0 The D action in the Pid - controller only effects on process value. The D action can be designed stronger for good disturbance reaction, as it has no effect in the reference reaction. (A controller with (too) strong D action in reference reaction overshoots at set-point changes.)</p> <p>1 The D action in the Pid - controller effects on deviation error (Process value and set-point). Controller is designed for both good reference reaction and disturbance reaction.</p>						
C.Act	r/w	base 1dP	115735082 17541	Enum	Enum_CAct	Operating sense of the controller. Inverse operation (e.g. heating) means increased heat input when the process value falls. Direct operation (e.g. cooling) means increased heat input when the process value increases.
<p>Step 0 To 29 By 512 1024</p> <p>0 Inverse or opposed-sense response, e.g. heating. The controller output is increased with a falling process value, and decreased with a rising process value.</p> <p>1 Direct or same-sense response, e.g. cooling. The controller output is increased with a rising process value, and decreased with a falling process value.</p>						
FAIL	r/w	base 1dP	115835084 17542	Enum	Enum_FAIL	With the sensor break response, the operator determines the instrument's reaction to a sensor break, thus ensuring a safe process condition.
<p>Step 0 To 29 By 512 1024</p> <p>0 controller outputs switched off</p> <p>1 y = parameter Y2 (Caution: fixed parameter Y2, not controller output Y2!). Note for three-point stepping controller: With <math>Y2 &lt; 0.01</math> CLOSED is set (DY= -100%), with <math>0.01 \leq Y2 \leq 99.9</math> no output is set (DY=0%), with <math>Y2 &gt; 99.9</math> OPEN is set (DY= +100%). Note for signallers: With <math>Y2 &lt; 0.01</math> OFF is set, with <math>0.01 \leq Y2 \leq 99.9</math> status keeps unchanged, with <math>Y2 &gt; 99.9</math> ON is set.</p> <p>2 y = mean output. The maximum permissible output can be adjusted with parameter Ym.H. To prevent determination of inadmissible values, mean value formation is only if the control deviation is lower than parameter L.Ym.</p>						
SP.2C	r/w	base 1dP	115935086 17543	Enum	Enum_SP2C	When switching over to the 2nd setpoint SP.2, control is performed without cooling.
<p>Step 0 To 29 By 512 1024</p> <p>0 Standard (cooling permitted with all setpoints).</p> <p>1 No cooling with active SP.2.</p>						

**1 Cntr**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
CYCL	r/w	base 1dP	116035088 17544	Enum	Enum_CYCL	Duty cycle for 2-point and 3-point controllers. Internally, the controller calculates a continuous output value, which is converted into switching pulses for digital outputs. The user can adapt the setting to calculate various duty cycles (on/off ratio).
Step 0 To 29 By 512 1024						<p>0 Standard. 'Bathtub curve'. The adjusted duty cycles t1 and t2 are valid for <math>\pm 50\%</math> control output. With very small and very large control outputs, the effective duty cycle is increased sufficiently to prevent nonsensically short operating pulses. The shortest pulses are limited to <math>\frac{1}{4}</math> of t1 and <math>\frac{1}{4}</math> of t2.</p> <p>1 Linear water cooling (standard switching behaviour for heating). Cooling only starts above an adjustable temperature value (E.H2O). Cooling 'On' with fixed pulse duration (t.on). Cooling 'Off' with minimum pulse duration (t.oFF), which varies according to controller output.</p> <p>2 Non-linear water cooling (standard switching behaviour for heating). The cooling characteristic ensures that controller action is relatively weak between 0 and approx. 70% of controller output. Above that, controller action increases rapidly up to the maximum cooling rate. The parameter 'F.H2O' can be used to alter the curve of the cooling characteristic.</p> <p>3 With constant pulses for heating and cooling. The adjusted duty cycles t1 and t2 are maintained over the entire output range. The parameter tp is used to adjust the minimum pulse duration. Shorter pulses are added internally until a pulse of length tp can be generated.</p>
LP.AL	r/w	base 1dP	116335094 17547	Enum	Enum_LPAL	Monitoring of control loop interruption (not possible with 3-point stepping controller, not possible with signaller)
Step 0 To 29 By 512 1024						<p>0 switched off / inactive</p> <p>1 LOOP alarm is generated, if with Y=100% there is no corresponding reaction of the process variable within the time of <math>2 \times t_i</math>. Possible remedial action: Check heating or cooling circuit, check sensor and replace it, if necessary, check controller and switching device.</p>
AdtG	r/w	base 1dP	116435096 17548	Enum	Enum_AdaGroup	Defines whether the controller is assigned to Group tuning. For Group tuning, a controller can be assigned one of four independently working Groups. Within each Group, the zones are only started together with the help of a tuning attempt for heating start-up, followed by a tuning attempt for cooling start-up. Zones with setpoint tuning, and disabled zones are not coordinated.
Step 0 To 29 By 512 1024						<p>0 no group selftuning</p> <p>1 Take part in the self-tuning during start-up of Group 1. Individual tuning and pulse-response tuning at setpoint are possible, regardless of this setting.</p> <p>2 Take part in the self-tuning during start-up of Group 2. Individual tuning and pulse-response tuning at setpoint are possible, regardless of this setting.</p> <p>3 Take part in the self-tuning during start-up of Group 3. Individual tuning and pulse-response tuning at setpoint are possible, regardless of this setting.</p> <p>4 Take part in the self-tuning during start-up of Group 4. Individual tuning and pulse-response tuning at setpoint are possible, regardless of this setting.</p>

## 1 Cntr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
Adt0	r/w	base 1dP	116535098 17549	Enum	Enum_Adt0	Optimization of the switching cycles t1 and t2 for the DED conversion can be disabled here. In order to fine-tune the positioning action, the switching periods are changed by the self-tuning function, if automatic tuning is configured.
Step 0 To 29 By 512 1024						0 The cycle duration is determined by auto-tuning. Thereby the best controlling results are obtained.
						1 The cycle duration is not determined by auto-tuning. An oversized cycle duration causes bad control behavior. An undersized cycle duration causes a more frequent switching, which can raise the wearout of mechanical actuators (relay, contactor).
Tune	r/w	base 1dP	116135090 17545	Enum	Enum_tune	Self-tuning procedure / sequence. Choice between: step response tuning during start-up and pulse response tuning at setpoint; or pulse response tuning during start-up and at setpoint; or only step response tuning during start-up, and no tuning at setpoint (no pulse).
Step 0 To 29 By 512 1024						0 At start-up with step function, impulse function at setpoint. The step function at start up requires a control deviation of more than 10% of the control range. At setpoint, with control deviation less than 10% of the control range, tuning is done with the impulse function.
						1 At start-up with impulse function. Setting for fast controlled systems (e.g. hot runner control). Always tuning with impulse function. At start up, with a control deviation of more than 10% of the control range, the control loop is optimized for a wide control range. At set-point the control deviation during self-tuning is small.
						2 At start up and at set-point always tune step function at start up. Tuning is done with step function at start up, regardless of the control deviation.
Strt	r/w	base 1dP	116235092 17546	Enum	Enum_Strt	Start of self-tuning. Self-tuning can always be started manually at the request of the operator. Here, it is possible to determine that self-tuning is started automatically under the following conditions: On power-up or when an oscillation of the process value is detected.
Step 0 To 29 By 512 1024						0 no automatic start (manual start via front interface)
						1 Manual or automatic start of auto-tuning at power on or when oscillating is detected (oscillating of process value by more than $\pm 0.5\%$ of the control range, and simultaneously the output value by more than 20%.) Note: Though the process is unchanged, at power on always the (time-consuming) auto-tuning is started.
B.FAIL	r/w	base 1dP	116635100 17550	Enum	Enum_BFail	Activation of the evaluation of the bus fault signals.
Step 0 To 29 By 512 1024						0 Do not evaluate bus fault signal.
						1 Response to bus fault is the same as for sensor fault (FAIL).
						2 Disable controller in case of a bus fault.

**1 Cntr**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
rnGL	r/w	base 1dP	116735102 17551	Float	-3000...3199	<input type="checkbox"/> Lower limit for the controller's operating range. The control range is independent of the measurement range. Reducing the control range will increase the sensitivity of the self-tuning process.

Step 0 To 29 By 512 1024

rnGH	r/w	base 1dP	116835104 17552	Float	-2999...3200	<input type="checkbox"/> Upper limit for the controller's operating range. The control range is independent of the measurement range. Reducing the control range will increase the sensitivity of the self-tuning process.
------	-----	-------------	--------------------	-------	--------------	--

Step 0 To 29 By 512 1024

• **PARA**

Name	r/w	Adr.	real	Typ	Value/off	Description
Pb1	r/w	base 1dP	117435116 17558	Float	0,1...3200	<input type="checkbox"/> Proportional band 1 (heating) in engineering unit, e.g. °C. Pb defines the relationship between controller output and control deviation. The smaller Pb is, the stronger is the control action for a given control deviation. If Pb is too large or too small, the control loop will oscillate (hunting).

Step 0 To 29 By 512 1024

Pb2	r/w	base 1dP	117535118 17559	Float	0,1...3200	<input type="checkbox"/> Proportional band 2 (cooling) in engineering units, e.g. °C. Pb defines the relationship between controller output and control deviation. The smaller Pb is, the stronger is the control action for a given control deviation. If Pb is too large or too small, the control loop will oscillate (hunting).
-----	-----	-------------	--------------------	-------	------------	--

Step 0 To 29 By 512 1024

ti1	r/w	base 1dP	117635120 17560	Float	1...3200	<input checked="" type="checkbox"/> Integral action time 1 (heating) [s]. Ti is the time constant of the integral portion. The smaller Ti is, the faster is the response of the integral action. Ti too small: Control tends to oscillate. Ti too large: Control is sluggish and needs a long time to line out.
-----	-----	-------------	--------------------	-------	----------	---

Step 0 To 29 By 512 1024

ti2	r/w	base 1dP	117735122 17561	Float	1...3200	<input checked="" type="checkbox"/> Integral action time 2 (cooling) [s]. Ti is the time constant of the integral portion. The smaller Ti is, the faster is the response of the integral action. Ti too small: Control tends to oscillate. Ti too large: Control is sluggish and needs a long time to line out.
-----	-----	-------------	--------------------	-------	----------	---

Step 0 To 29 By 512 1024

## 1 Cntr

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
td1	r/w	base 1dP	117835124 17562	Float	1...3200	<input checked="" type="checkbox"/> Derivative action time 1 (heating) [s], second parameter set. Td is the time constant of the derivative portion. The faster the process value changes, and the larger the value of Td is, the stronger will be the derivative action. Td too small: Very little derivative action. Td too large: Control tends to oscillate.

Step 0 To 29 By 512 1024

td2	r/w	base 1dP	117935126 17563	Float	1...3200	<input checked="" type="checkbox"/> Derivative action time 2 (cooling) [s], second parameter set. Td is the time constant of the derivative portion. The faster the process value changes, and the larger the value of Td is, the stronger will be the derivative action. Td too small: Very little derivative action. Td too large: Control tends to oscillate.
-----	-----	-------------	--------------------	-------	----------	---

Step 0 To 29 By 512 1024

t1	r/w	base 1dP	118035128 17564	Float	0,2...3200	<input type="checkbox"/> Minimum duty cycle 1 (heating) [s]. With the standard duty cycle converter, the shortest pulse duration is 1/4 x t1. If the duty cycle is not to be optimized, this must be entered in the configuration. (Default: Optimization of the duty cycle during self-tuning, but also if the output value is less than 5%).
----	-----	-------------	--------------------	-------	------------	--

Step 0 To 29 By 512 1024

t2	r/w	base 1dP	118135130 17565	Float	0,2...3200	<input type="checkbox"/> Minimum duty cycle 2 (cooling) [s]. With the standard duty cycle converter, the shortest pulse duration is 1/4 x t1. If the duty cycle is not to be optimized, this must be entered in the configuration. (Default: Optimization of the duty cycle during self-tuning, but also if the output value is less than 5%).
----	-----	-------------	--------------------	-------	------------	--

Step 0 To 29 By 512 1024

tP	r/w	base 1dP	118435136 17568	Float	0,1...3200	<input checked="" type="checkbox"/> Minimum pulse duration [s]. Used for switching with constant periods. For positioning values that require a shorter pulse than adjusted for 'tp', the output is suppressed, but 'remembered'. The controller continues adding the internal short pulses until a value equal to 'tp' can be output.
----	-----	-------------	--------------------	-------	------------	--

Step 0 To 29 By 512 1024

t.on	r/w	base 1dP	119335154 17577	Float	0,1...3200	<input type="checkbox"/> Impulse length for water cooling. Fixed for all values of controller output. The pause time is varied.
------	-----	-------------	--------------------	-------	------------	---

Step 0 To 29 By 512 1024

t.off	r/w	base 1dP	119435156 17578	Float	1...3200	<input type="checkbox"/> Min. pause time for water cooling. The max. effective controller output results from t.on/(t.on+t.off)-100%
-------	-----	-------------	--------------------	-------	----------	--

Step 0 To 29 By 512 1024

**1 Cntr**• **PArA**

Name	r/w	Adr.	real	Typ	Value/off	Description
F.H2O	r/w	base 1dP	119535158 17579	Float	0,1...3200	<input type="checkbox"/> Adaptation of the (non-linear) water-cooling characteristic.If the cooling action is very strong, and causes an unfavourable transition between heating and cooling, a non-linear characteristic can reduce the cooling action considerably.Adjust FH20 = 1 for output values up to -70%; FH20 = 2 for values up to approx. -80%, and FH20 = 0.5 for up to approx. -60%.
Step 0 To 29 By 512 1024						
E.H2O	r/w	base 1dP	119235152 17576	Float	-3000...3200	<input type="checkbox"/> Min. temperature for water cooling. Below the set temperature no water cooling happens
Step 0 To 29 By 512 1024						
SH	r/w	base 1dP	118235132 17566	Float	0...3200	<input type="checkbox"/> Neutral zone, or switching difference of the signaller [engineering unit].Too small: unnecessarily high switching frequency.Too large: reduced controller sensitivity.With 3-point controllers this slows down the direct transition from heating to cooling. With 3-point stepping controllers, it reduces the switching operations of the actuator around setpoint.
Step 0 To 29 By 512 1024						
HYS.H	r/w	base 1dP	119835164 17582	Float	0...3200	<input type="checkbox"/> Switching hysteresis above the setpoint of the signaller [engineering unit].
Step 0 To 29 By 512 1024						
HYS.L	r/w	base 1dP	119735162 17581	Float	0...3200	<input type="checkbox"/> Switching hysteresis below the setpoint of the signaller [engineering unit].
Step 0 To 29 By 512 1024						
tt	r/w	base 1dP	118535138 17569	Float	3...3200	<input type="checkbox"/> Travel time of the actuator motor [s]. If no feedback signal is available, the controller calculates the actuator position by means of an integrator and the adjusted motor travel time. For this reason, a precise definition of the motor travel time between min and max (0% and 100%) is important.
Step 0 To 29 By 512 1024						
d.SP	r/w	base 1dP	118335134 17567	Float	-3000...3200	<input type="checkbox"/> Separation of the D / Y switch-over point from the setpoint [engineering unit]. With a significant control deviation heating start is in delta connection. When the control deviation increases, the instrument switches over to reduced power (Y connection) for line-out to the set-point.
Step 0 To 29 By 512 1024						
Y2	r/w	base 1dP	118635140 17570	Float	-105...105	<input type="checkbox"/> Second positioning value [%]. Activated Y2 = positioner control. Caution: The parameter 'positioning output Y2' must not be confused with the controller output Y2!
Step 0 To 29 By 512 1024						



## 1 Cntr

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
Y.Lo	r/w	base 1dP	118735142 17571	Float	-105...104	<input type="checkbox"/> Lower output limit [%] The range is dependant of the type of controller: 2 point controller: 0...ymax+1 3 point controller: -105 ymax-1
Step 0 To 29 By 512 1024						
Y.Hi	r/w	base 1dP	118835144 17572	Float	-104...105	<input type="checkbox"/> Upper output limit [%] The range is ymin+1 ....105
Step 0 To 29 By 512 1024						
Y.0	r/w	base 1dP	118935146 17573	Float	-105...105	<input type="checkbox"/> Offset for die positioning value [%]. This is added to the controller output, and has the most effect with P and PD controllers. (With PID controllers, the effect is compensated by the integral action.) With a control deviation = 0, the P controller generates a control output Y0.
Step 0 To 29 By 512 1024						
Ovl.H	r/w	base 1dP	120235172 17586	Float	-100...100	<input type="checkbox"/> Overlap / displacement in driver for output heat.  Positive values designates a dead zone to negative actuator values. Neither heating nor cooling is active.  Negative values designates a overlap to negative actuator values. Heating and cooling are simultaneously active
Ovl.C	r/w	base 1dP	120335174 17587	Float	-100...100	<input type="checkbox"/> Overlap / displacement in driver for output cool.  Negative values designates a dead zone to positive actuator values. Neither cooling nor heating is active.  Positive values designates a overlap to positive actuator values. Cooling and heating are simultaneously active
Ym.H	r/w	base 1dP	119035148 17574	Float	-105...105	<input type="checkbox"/> Limit for the mean control output value Ym in case of sensor break [%]. The mean control output value is configurable as the response to sensor break. The maximum mean output value = YmH.
Step 0 To 29 By 512 1024						
L.Ym	r/w	base 1dP	119135150 17575	Float	0,1...3200	<input type="checkbox"/> Max. control deviation (xw), at the start of mean value calculation [engineering unit]. When calculating the mean value, data are only taken into account if the control deviation is small enough. 'Lym' is a preset value that determines how precisely the calculated output value is matched to the setpoint.
Step 0 To 29 By 512 1024						



## 1 Cntr

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
Y.St	r/w	base 1dP	119635160 17580	Float	-105...105	<input type="checkbox"/> Reduced output value for start-up [%]. The start-up function is a protective function, e.g. with hot runner control. To prevent destruction of high-performance heating elements, they must be heated slowly to remove any humidity. With activated start-up function, the controller maintains the reduced starting temperature for a defined dwell period. Subsequently, the controller switches over to the main setpoint.
Step 0 To 29 By 512 1024						
F.Yop	r/w	base 1dP	119935166 17583	Float	-10...10	<input type="checkbox"/> Only with impulse function at setpoint: Factor for the pulse height of the output value for a self-tuning attempt at setpoint. The pulse of the output value is weighted with the factor: Heating pulse = 20% * factor Cooling pulse = 15% * factor With negative values, the output value is reduced by the pulse. Values between -0.1 and +0.1 are not permissible (automatic correction to -1 or +1).
Step 0 To 29 By 512 1024						
T.Pir	r/w	base 1dP	120035168 17584	Int	1...1000	<input type="checkbox"/> Only with impulse function at setpoint: Monitoring time (window width) for 'process lined out' monitor. Total time required for determining the 'process lined out' condition, and defining the gradient on the output value or the process value. Is determined by means of the function 'floating mean value'. Preset value in minutes.
Step 0 To 29 By 512 1024						
O.Hk	r/w	base 1dP	120135170 17585	Enum	Enum_Ohk	Only with impulse function at setpoint: manual selection of the self-tuning attempt: Heating or cooling. Independent of the working point or of the active process at the time the self-tuning attempt is started, the selected test mode will always be carried out. 0: Automatic / active process. 1: Always carry out a pulse test for heating. 2: Always carry out a pulse test for cooling.
Step 0 To 29 By 512 1024						
					0	Self-tuning using the pulse response at setpoint optimizes the active process. Depending on which side of the 3-point controller is switched on (active) at the start of self-tuning, the heating or cooling parameters are optimized.
					1	Self-tuning using the pulse response at setpoint optimizes the heating parameters. The steady-state output (PIR) is 'frozen'. With active heating, the pulse is applied to the heating output (with the correct polarity), whilst with active cooling, the pulse is applied as an additional (simultaneous) heating output.
					2	Self-tuning using the pulse response at setpoint optimizes the cooling parameters. The steady-state output (PIR) is 'frozen'. With active heating, the pulse is applied as an additional (simultaneous) cooling output, whilst with active cooling, the pulse is applied to the cooling output (positive Fyop means increased cooling action).

## 1 Cntr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Ada.St	r/w	base 1dP	123535238 17619	Enum	<i>Enum_AdaStart</i>	Starting / stopping the self-tuning function. After the start signal, the controller waits until the process reaches a stable condition (PIR) before it starts the self-tuning process. Self-tuning can be aborted manually at any time. After a successful self-tuning attempt, the controller automatically resumes normal operation.

Step 0 To 29 By 512 1024

0 'Stop' will abort the self-tuning process, and the controller returns to normal operation with the previous parameter settings.

1 Start of the self-tuning process is possible during manual or automatic controller operation.

C.Search	r/w	base 1dP	123935246 17623	Int	0...1	<input type="checkbox"/> In union with the relay module 8/8 the initial position is looked for with a burner connection.
----------	-----	-------------	--------------------	-----	-------	--

Step 0 To 29 By 512 1024

**1 Cntr**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
C.Sta	r	base 1dP	1214 17598	35196	Int -30000...3200 ^	<input type="checkbox"/> Status informations of the controller.f.e. switching signals, controller off or informations about selftuning. The controller status shows the actual adjustments of the controller.

Step 0 To 29 By 512 1024

Bit 0: Switching signal heating: 0: off 1: on  
 Bit 1: Switching signal cooling: 0: off 1: on  
 Bit 2: Sensor error 0: ok 1: error  
 Bit 3: Controlsignal: Manual/automatic  
 0: automatic 1: manual  
 Bit 4: Controlsignal: Y2  
 0: Y2 not activ 1: Y2 activ  
 Bit 5: Controlsignal: Ext. setting of outputsignal  
 0: not activ 1: activ  
 Bit 6: Controlsignal: Controller off  
 0: contr. on 1: contr. off  
 Bit 7: Controlsignal: The activ parameter set  
 0: parameterset 1  
 1: parameterset 2  
 Bit 8: Loopalarm  
 0: no alarm  
 1: alarm  
 Bit 9: Soft start function  
 0: not activ  
 1: activ  
 Bit 10: Rate to setpoint  
 0: not activ  
 1: activ  
 Bit 11: Not used  
 Bit 12-15: Internal functional statuses (operating state)  
 0 0 0 0 Automatic  
 0 0 0 1 Selftuning is running  
 0 0 1 0 Selftuning faulty  
 (Waiting for operator signal)  
 0 0 1 1 Sensor error  
 0 1 0 0 Not used  
 0 1 0 1 Manual  
 0 1 1 1 Not used  
 1 0 0 0 Manual, with external presetting of the outputsignal  
 1 0 0 1 Outputs switched off (neutral)  
 1 0 1 0 Abortion of the selftuning (by control- or error-signal)

## 1 Cntr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
C.Sta2	r	base 1dP	123835244 17622	Int	-30000...3200 n	Status informations of the controller.f.e. switching signals, controller off or informations about selftuning. The controller sratus shows the actual adjustments of the controller.

Step 0 To 29 By 512 1024

Bit 0: Switching signal heating:  
0: off  
1: on

Bit 1: Switching signal cooling:  
0: off  
1: on

Bit 2: Sensor error  
0: ok  
1: error

Bit 3: Controlsignal: Manual/automatic  
0: automatic  
1: manual

Bit 4: Controlsignal: W2  
0: not active  
1: active

Bit 5: Controlsignal: Self-tuning:  
0: not active  
1: running

Bit 6: Controlsignal: Controller off  
0: contr. on  
1: contr. off

Bit 7: Controlsig.:The active parameter set  
0: parameterset 1  
1: parameterset 2

Bit 8: Loopalarm  
0: no alarm  
1: alarm

Bit 9: Soft start function  
0: not active  
1: active

Bit 10: Alarm 1  
0: not active  
1: active or latched

Bit 11: Alarm 2  
0: not active  
1: active or laced

Bit 12: Alarm 3  
0: not active  
1: active or latched

Bit 13: Heating current alarm  
0: not active  
1: active

Bit 14: Short circuit alarm  
0: not active  
1: active

Bit 15: Transmission error via Profibus  
0: no error  
1: transmitted data with error

**1 Cntr**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
diFF	r	base 1dP	121835204 17602	Float	-3000...3200	<input type="checkbox"/> Control deviation, is defined as process value minus setpoint. Positive Xw means that the process value is above the setpoint. A small control deviation indicates precise control.
Step 0 To 29 By 512 1024						
DYman	r/w	base 1dP	122235212 17606	Float	-210...210	<input type="checkbox"/> Differential preset output value, which is added to the actual output value during manual operation. Negative values reduce the output.
Step 0 To 29 By 512 1024						
Hc.Me	r	base 1dP	123735242 17621	Float	-3000...3200	<input checked="" type="checkbox"/> Heating current measurement value for the controller. If several heating current monitors are active for one controller, the sum of the heating current measurements is indicated.
Step 0 To 29 By 512 1024						
Kp1	r	base 1dP	122935226 17613	Float	-3000...3200	<input type="checkbox"/> Process gain for 'heating'. For control loops with self-regulation, process gain is the ratio determined by the change of the control output and the resulting permanent change of the process value. Kp is calculated by the self-tuning function, and is used for defining controller action.
Step 0 To 29 By 512 1024						
Kp2	r	base 1dP	123335234 17617	Float	-3000...3200	<input type="checkbox"/> Process gain for 'cooling'. For control loops with self-regulation, process gain is the ratio determined by the change of the control output and the resulting permanent change of the process value. Kp is calculated by the self-tuning function, and is used for defining controller action.
Step 0 To 29 By 512 1024						

## 1 Cntr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Msg1	r	base 1dP	123035228 17614	Enum	Enum_Msg	The result of self-tuning for 'heating' indicates whether self-tuning was successful, and with what result.
Step 0 To 29 By 512 1024						
						0 No message / Tuning attempt still running
						1 Self-tuning has been completed successfully. The new parameters are valid.
						2 Self-tuning was successful, but with a warning. The new parameters are valid. Note: Self-tuning was aborted due to the risk of an exceeded setpoint, but useful parameters were determined. Possibly repeat the attempt with an increased setpoint reserve.
						3 The process reacts in the wrong direction. Possible remedy: Reconfigure the controller (inverse <-> direct). Check the controller output sense (inverse <-> direct).
						4 No response from the process. Perhaps the control loop is open. Possible remedy: Check sensor, connections, and process.
						5 The process value turning point of the step response is too low. Possible remedy: Increase the permitted step output range, i.e. increase the parameter Y.Hi ('heating') or reduce the parameter Y.Lo ('cooling').
						6 Self-tuning was aborted due to the risk of an exceeded setpoint. No useful parameters were determined. Possible remedy: Repeat the attempt with an increased setpoint reserve.
						7 The step output change is not large enough (minimum change > 5 %). Possible remedy: Increase the permitted step output range, i.e. increase the parameter Y.Hi ('heating') or reduce the parameter Y.Lo ('cooling').
						8 The controller is waiting. Setpoint reserve must be given before generating the step output change. Acknowledgment of this error message leads to switch-over to automatic mode. If self-tuning shall be continued, change set-point, change process value, or decrease set-point range.

## 1 Cntr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Msg2	r	base 1dP	1234 17618	35236	Enum <i>Enum_Msg</i>	The result of self-tuning for 'cooling' indicates whether self-tuning was successful, and with what result.
Step 0 To 29 By 512 1024						<p>0 No message / Tuning attempt still running</p> <p>1 Self-tuning has been completed successfully. The new parameters are valid.</p> <p>2 Self-tuning was successful, but with a warning. The new parameters are valid. Note: Self-tuning was aborted due to the risk of an exceeded setpoint, but useful parameters were determined. Possibly repeat the attempt with an increased setpoint reserve.</p> <p>3 The process reacts in the wrong direction. Possible remedy: Reconfigure the controller (inverse &lt;-&gt; direct). Check the controller output sense (inverse &lt;-&gt; direct).</p> <p>4 No response from the process. Perhaps the control loop is open. Possible remedy: Check sensor, connections, and process.</p> <p>5 The process value turning point of the step response is too low. Possible remedy: Increase the permitted step output range, i.e. increase the parameter Y.Hi ('heating') or reduce the parameter Y.Lo ('cooling').</p> <p>6 Self-tuning was aborted due to the risk of an exceeded setpoint. No useful parameters were determined. Possible remedy: Repeat the attempt with an increased setpoint reserve.</p> <p>7 The step output change is not large enough (minimum change &gt; 5 %). Possible remedy: Increase the permitted step output range, i.e. increase the parameter Y.Hi ('heating') or reduce the parameter Y.Lo ('cooling').</p> <p>8 The controller is waiting. Setpoint reserve must be given before generating the step output change. Acknowledgment of this error message leads to switch-over to automatic mode. If self-tuning shall be continued, change set-point, change process value, or decrease set-point range.</p>
P.Cha	r/w	base 1dP	1225 17609	35218	Int 0...1	<input type="checkbox"/> This signal is set by the self-tuning function after calculating new parameters. This enables changes of the controller's parameter set to be signalled to the E-Tool.
Step 0 To 29 By 512 1024						
POS	r	base 1dP	1219 17603	35206	Float -3000...3200	<input type="checkbox"/> The position feedback Yp shows the actuator position with 3-point stepping controllers. If Yp is outside the limits Ymin and Ymax, the output of positioning pulses is suppressed.
Step 0 To 29 By 512 1024						
SP.EF	r	base 1dP	1217 17601	35202	Float -3000...3200	<input type="checkbox"/> Effective setpoint. The value reached at the end of setpoint processing, after taking W2, external setpoint, gradient, boost function, programmer settings, start-up function, and limit functions into account. Comparison with the effective process value leads to the control deviation, from which the necessary controller response is derived.
Step 0 To 29 By 512 1024						

## 1 Cntr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
T.Sta	r	base 1226 1dP 17610	35220	Int	-30000...3200 n	<input type="checkbox"/> Status information during self-tuning, e.g. the actual condition, and possible results, warnings, and error messages.
Step 0 To 29 By 512 1024					Bit 0 Process lined out; 0 = No; 1 = Yes Bit 1 Operating mode 'Self-tuning controller; 0 = Off; 1 = On Bit 2 Result of controller self-tuning; 0 = OK; 1 = Fault Bit 3 - 7 Not used Bit 8 - 11 Result of the 'heating' attempt 0 0 0 0 No message / Attempt still running 0 0 0 1 Successful 0 0 1 0 Successful, with risk of exceeded setpoint 0 0 1 1 Error: Wrong operating sense 0 1 0 0 Error: No response from process 0 1 0 1 Error: Turning point too low 0 1 1 0 Error: Risk of exceeded setpoint 0 1 1 1 Error: Step output too small 1 0 0 0 Error: Setpoint reserve too small Bit 12 - 15 Result of 'cooling' attempt (same as heating attempt)	
Tu1	r	base 1227 1dP 17611	35222	Float	-3000...3200	<input type="checkbox"/> 'Heating' delay time of the loop. Tu is calculated by the self-tuning function: It is the time delay before the process reacts significantly. In effect, Tu is a dead time that is determined by the reaction of the process to a change of the control output. It is used for defining controller action.
Step 0 To 29 By 512 1024						
Tu2	r	base 1231 1dP 17615	35230	Float	-3000...3200	<input type="checkbox"/> 'Cooling' delay time of the loop. Tu is calculated by the self-tuning function: It is the time delay before the process reacts significantly. In effect, Tu is a dead time that is determined by the reaction of the process to a change of the control output. It is used for defining controller action.
Step 0 To 29 By 512 1024						
Vmax1	r	base 1228 1dP 17612	35224	Float	-3000...3200	<input type="checkbox"/> Max. rate of change for 'heating', i.e. the fastest process value increase during self-tuning. Vmax is calculated by the self-tuning function, and is determined by the reaction of the process to a change of the control output. It is used for defining controller action.
Step 0 To 29 By 512 1024						
Vmax2	r	base 1232 1dP 17616	35232	Float	-3000...3200	<input type="checkbox"/> Max. rate of change for 'cooling', i.e. the fastest process value increase during self-tuning. Vmax is calculated by the self-tuning function, and is determined by the reaction of the process to a change of the control output. It is used for defining controller action.
Step 0 To 29 By 512 1024						
X.Eff	r	base 1216 1dP 17600	35200	Float	-3000...3200	<input type="checkbox"/> Effective process value. The value resulting from input scaling and measurement value processing, i.e. after input signal processing. Comparison of the effective process value with the effective setpoint results in the value for control deviation, and the corresponding controller response.
Step 0 To 29 By 512 1024						



**1 Cntr**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
YDec	r/w	base 1dP	1224 35216 17608	Enum	Enum_YDec	Decreasing the output value. There are two speeds: 40 s or 10 s for the change from 0 % to 100 %. Note: The 3-point stepping controller translates the increments as DOWN.
Step 0 To 29 By 512 1024					0	Not active
					1	decrement output
YGrw	r/w	base 1dP	1236 35240 17620	Enum	Enum_YGrwLs	Gradient of Y-variation 'slow' or 'fast'. Changes the positioning output speed. There are two speeds for output variation: from 0% to 100% in 40s or in 10s.
Step 0 To 29 By 512 1024					0	Slow change of Y, from 0% to 100% in 40 seconds.
					1	Fast change of Y, from 0% to 100% in 10 seconds.
YInc	r/w	base 1dP	1223 35214 17607	Enum	Enum_YInc	Increasing the output value. There are two speeds: 40 s or 10 s for the change from 0 % to 100 %. Note: The 3-point stepping controller translates the increments as UP.
Step 0 To 29 By 512 1024					0	Not active
					1	increment output
Yman	r/w	base 1dP	1221 35210 17605	Float	-110...110	<input type="checkbox"/> Absolute preset output value, which is used as output value during manual operation. Caution: With 3-point stepping controllers, Yman (evaluated the same as Dyman) is added to the actual output value as a relative shift.
Step 0 To 29 By 512 1024						
Ypid	r	base 1dP	1215 35198 17599	Float	-3000...3200	<input type="checkbox"/> Output value Ypid is the output signal determined by the controller, and from which the switching pulses for the digital and analog control outputs are calculated. Ypid is also available as an analog signal. e.g. for visualization.
Step 0 To 29 By 512 1024						

**2 HC**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
Hc.Cy	r/w	base 1dP	1245 35258 17629	Int	1...3000	<input type="checkbox"/> Cycle time of the heating circuit monitor (in seconds). Starting from the selected number of seconds, and within the measurement cycle, a monitoring operation is carried out. This means that an individual channel is monitored at intervals determined by channel no. + 1 (for overall measurement) multiplied by the cycle time.
Step 0 To 5 By 512 1024						
Hc.Ti	r/w	base 1dP	1246 35260 17630	Int	2...255	<input type="checkbox"/> Duration of switch-on cycle that is required for the heating circuit monitor (signal settling time).
Step 0 To 5 By 512 1024						

**3 InP**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
InpMod	r/w	base 1dP	107434916 17458	Enum	<i>Enum_Modul</i>	Module that supplies the input signal.

Step 0 To 29 By 512 1024

0	Not active
1	device
2	module 1
3	module 2
4	module 3
5	module 4
6	module 5
7	module 6
8	module 7
9	module 8
10	module 9
11	module 10
12	module 11
13	module 12
14	module 13
15	module 14
16	module 15
17	module 16
18	module 17
19	module 18
20	module 19
21	module 20

InpInd	r/w	base 1dP	107534918 17459	Enum	<i>Enum_Input_Inde</i> <i>x</i>	Selection of an input of the device or an internal bus module.
--------	-----	-------------	--------------------	------	------------------------------------	--

Step 0 To 29 By 512 1024

0	not active
1	input 1
2	input 2
3	input 3
4	input 4
5	input 5
6	input 6
7	input 7
8	input 8
9	input 9
10	input 10
11	input 11
12	input 12
13	input 13
14	input 14
15	input 15
16	input 16

## 3 InP

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description	
S.tYP	r/w	base 1dP	1076 17460	34920	Enum	<i>Enum_StYP_I</i>	Selection of the connected sensor type or input signal, e.g. thermocouple Type J. The input signals can be scaled.
Step 0 To 29 By 512 1024						0	thermocouple type L (-100...900°C, -148...1652°F), Fe-CuNi DIN
						1	thermocouple type J (-100...1200°C, -148...2192°F), Fe-CuNi
						2	thermocouple type K(-100...1350°C, -148...2462°F), NiCr-Ni
						3	thermocouple type N (-100...1300°C, -148...2372°F), Nicrosil-Nisil
						4	thermocouple type S (0...1760°C, 32...3200°F), PtRh-Pt10%
						5	thermocouple type R (0...1760°C, 32...3200°F), PtRh-Pt13%
						6	thermocouple type T (-200...400°C, -328...752°F), Cu-CuNi
						7	thermocouple type C (0...2315°C, 32...4199°F), W5%Re-W26%Re
						8	thermocouple type D (0...2315°C, 32...4199°F), W3%Re-W25%Re
						9	thermocouple type E (-100...1000°C, -148...1832°F), NiCr-CuNi
						10	thermocouple type B0/100...1820°C, 32/212...3308°F), PtRh-Pt6%
						11	thermocouple type W (0...2315°C, 32...4199°F)
						20	Pt100 (-200 ... 850°C, -140...1562°F)
						21	Pt 1000 (-200...850°C, -328...1562°F)
						22	Ni 100 (-60...180°C, -76...356°F)
						23	Ni 1000 (-60...180°C, -76...356°F)
						24	KTY81-110 (-55...150°C, -67...302°F)
						25	KTY84 (-40...300°C, -104...572°F)
						26	Resistance : 0...400 Ohms
						27	Resistance : 0...450 Ohms
						28	Resistance : 0...4000 Ohms
						30	current : 0...20 mA
						31	current : -20...20 mA
						32	current : 4...20 mA
						33	current : 0...40 mA
						34	current : -40...40 mA
						40	voltage : 0...5 V
						41	voltage : -5...5 V
						42	voltage : 0...10 V
						43	voltage : -10...10 V
						44	voltage : 0...25 V
						45	voltage : -25...25 V
						46	voltage : 0...50 V
						47	Voltage : 0...70 mV
						48	Voltage: -15...+85 mV

Forcing	r/w	base 1dP	1077 17461	34922	Enum	<i>Enum_Forcing</i>	Forcing of the input. Forcing involves the external operation of an input, i.e. the instrument accepts the value at this input. (Used for the operation of free inputs e.g. by a supervisory PLC, for example for functional testing.)
Step 0 To 29 By 512 1024						0	No forcing. The value is read by the digital input.
						1	Forcing is active, the value is written via serial interface.

## 3 InP

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description	
Ext.TC	r/w	base 1dP	107834924 17462	Enum	Enum_ExtTk	Selection of internal or external temperature compensation with thermocouple input.	
Step 0 To 29 By 512 1024						0	The internal (built-in) temperature compensation is active. Additional adjustments not necessary.
						1	External temp. compensation, either via KS Vario with cold junction measurement, or via a thermostat. Cold junction measurement: The VARIO station measures the temperature in the terminal compartment using an own sensor. Thermostat measurement: Terminal compartment is kept at a defined constant temperature.

X.korr	r/w	base 1dP	107934926 17463	Enum	Enum_Xkorr	Measurement value correction / Scaling. An adaptation of the input values to the display values is possible in the parameter Level. With an activated scaling function, the associated parameters are transferred into the device together with the Engineering, as opposed to a device-dependent correction.	
Step 0 To 29 By 512 1024						0	Without scaling
						1	The 2-point correction is entered into the unit by means of the Engineering Tool operating page. Enter the raw measurement value for the lower and upper scaling points, then adjust the corresponding 'corrected values' and confirm the entry. A measurement value correction in an Engineering is only transferred to the controller on demand.
						2	Scaling the input value to the display range, e.g. with transmitters for weighting the voltage input. The input (voltage) value and the display range (weighting) for the lower (InL, OuL) and the upper scaling points (InH, OuH) are adjusted in the Parameter Level (Parameter/Channel data/InP).

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
InL	r/w	base 1dP	108134930 17465	Float	-3000...3200 <input type="checkbox"/>	Input value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the lower scaling point (e.g. 4 mA) is done using the corresponding electrical value.
Step 0 To 29 By 512 1024						
OuL	r/w	base 1dP	108234932 17466	Float	-3000...3200 <input type="checkbox"/>	Display value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the lower scaling point, e.g. 4 mA is displayed as 2 [pH].
Step 0 To 29 By 512 1024						
InH	r/w	base 1dP	108334934 17467	Float	-3000...3200 <input type="checkbox"/>	Input value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the upper scaling point (e.g. 20 mA) is done using the corresponding electrical value.
Step 0 To 29 By 512 1024						

## 3 InP

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
OuH	r/w	base 1084 1dP 17468	34936	Float	-3000...3200	<input type="checkbox"/> Display value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the upper scaling point, e.g. 20 mA is displayed as 12 [pH].

Step 0 To 29 By 512 1024

t.F	r/w	base 1085 1dP 17469	34938	Float	0...100	<input type="checkbox"/> Filter time constant [s]. Every input is fitted with a digital (software) low-pass filter for suppressing process-related disturbances on the input leads. Higher filter settings improve the suppression, but increase the delay of the input signals.
-----	-----	------------------------	-------	-------	---------	--

Step 0 To 29 By 512 1024

OffTk	r/w	base 1086 1dP 17470	34940	Float	-3000...3200	<input type="checkbox"/> An additional offset can be entered manually for the temperature compensation.
-------	-----	------------------------	-------	-------	--------------	---

Step 0 To 29 By 512 1024

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
F.Inp	r/w	base 1092 1dP 17476	34952	Float	-3000...3200	<input type="checkbox"/> Forcing the value for an analog input INP. Forcing involves the external operation of an input. The instrument takes over the value at this input like a measurement value (preset value for inputs from a superordinate system, e.g. for a function test.)

Step 0 To 29 By 512 1024

Fail	r	base 1091 1dP 17475	34950	Enum	<i>Enum_Input</i>	Input circuit fault: faulty or incorrectly connected sensor.
------	---	------------------------	-------	------	-------------------	--

Step 0 To 29 By 512 1024

0	no error
1	Break of the input circuit. Possible remedy: Check connections, replace sensor.
2	Incorrect polarity of the input circuit. Possible remedy: Reverse the input connections.
3	Undefined state.
4	Input short circuit. Possible remedy: Check connections, replace sensor.

PV	r	base 1089 1dP 17473	34946	Float	-3000...3200	<input type="checkbox"/> Measurement value after the measurement value correction (e.g. with offset or 2-point correction, and scaling).
----	---	------------------------	-------	-------	--------------	--

Step 0 To 29 By 512 1024

Xphys	r	base 1090 1dP 17474	34948	Float	-3000...3200	<input type="checkbox"/> Measurement value before the measurement value correction (unprocessed).
-------	---	------------------------	-------	-------	--------------	---

Step 0 To 29 By 512 1024

## 4 Lim1

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
Fcn.3	r/w	base 1dP	128435336 17668	Enum	Enum_Fcn	Activation and adjustment of the limit value alarm (e.g. for input circuit monitoring), e.g. with/without storage.
Step 0 To 29 By 512 1024						0 No limit value monitoring. 1 measured value monitoring. The alarm signal is generated, if the limit is exceeded. If the measured value is within the limits (including hysteresis) again, this alarm signal is reset. 2 Measured value monitoring + alarm status latch. An alarm signal is generated, if the limit is exceeded. A latched alarm signal remains latched until it is manually reset.
Src.3	r/w	base 1dP	128535338 17669	Enum	Enum_Src_I	Source for limit value. Selection of which value is to be monitored.
Step 0 To 29 By 512 1024						0 Process value = absolute alarm 1 control deviation xw (process value - set-point) 2 Control deviation Xw (= relative alarm) with suppression during start-up and setpoint changes. 4 effective set-point Weff 5 correcting variable y (controller output) 6 control variable deviation xw (process variable - setpoint internal) = relative alarm to SP internal, e. g. ramp or start-up circuit. Note: The SP internal is monitored, which is the target set-point of a ramp, not the changing effective SP. 7 Control deviation Xw (= relative alarm) with suppression during start-up and setpoint changes. Limit value monitoring is continued as soon as the control deviation comes within the alarm limits again, at the latest after 10 * Tn.

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
L.3	r/w	base 1dP	128935346 17673	Float	-3000...3200 <input checked="" type="checkbox"/>	Lower limit value. The alarm is triggered if the value falls below the limit, and is reset with lower limit value plus hysteresis.
Step 0 To 29 By 512 1024						
H.3	r/w	base 1dP	129035348 17674	Float	-3000...3200 <input checked="" type="checkbox"/>	Upper limit value. The alarm is triggered if the value rises above the limit, and is reset with upper lower limit value plus hysteresis.
Step 0 To 29 By 512 1024						
HYS.3	r/w	base 1dP	129135350 17675	Float	0...3200 <input type="checkbox"/>	Hysteresis of the limit value. Switching difference for upper and lower limit value. The limit value must change by this amount (rise above upper limit or fall below lower limit) before the limit value alarm is reset.
Step 0 To 29 By 512 1024						

**4 Lim1**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
Lim 3	r	base 1dP	1293 35354 17677	Enum	<i>Enum_LimStatus</i>	Limit value status: No alarm present or stored.
Step 0 To 29 By 512 1024					0	no alarm
					1	latched alarm
					2	A limit value has been exceeded.

**5 Lim2**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
Fcn.3	r/w	base 1dP	1294 35356 17678	Enum	<i>Enum_Fcn</i>	Activation and adjustment of the limit value alarm (e.g. for input circuit monitoring), e.g. with/without storage.
Step 0 To 29 By 512 1024					0	No limit value monitoring.
					1	measured value monitoring. The alarm signal is generated, if the limit is exceeded. If the measured value is within the limits (including hysteresis) again, this alarm signal is resetted.
					2	Measured value monitoring + alarm status latch. An alarm signal is generated, if the limit is exceeded. A latched alarm signal remains latched until it is manually resetted.

Src.3	r/w	base 1dP	1295 35358 17679	Enum	<i>Enum_Src_I</i>	Source for limit value. Selection of which value is to be monitored.
Step 0 To 29 By 512 1024					0	Process value = absolute alarm
					1	control deviation xw (process value - set-point)
					2	Control deviation Xw (= relative alarm) with suppression during start-up and setpoint changes.
					4	effective set-point Weff
					5	correcting variable y (controller output)
					6	control variable deviation xw (process variable - setpoint internal) = relative alarm to SP internal, e. g. ramp or start-up circuit. Note: The SP internal is monitored, which is the target set-point of a ramp, not the changing effective SP.
					7	Control deviation Xw (= relative alarm) with suppression during start-up and setpoint changes. Limit value monitoring is continued as soon as the control deviation comes within the alarm limits again, at the latest after 10 * Tn.

• **PArA**

Name	r/w	Adr.	real	Typ	Value/off	Description
L.3	r/w	base 1dP	1299 35366 17683	Float	-3000...3200	<input checked="" type="checkbox"/> Lower limit value. The alarm is triggered if the value falls below the limit, and is reset with lower limit value plus hysteresis.
Step 0 To 29 By 512 1024						

**5 Lim2**• **PArA**

Name	r/w	Adr.	real	Typ	Value/off	Description
H.3	r/w	base 1dP	130035368 17684	Float	-3000...3200 <input checked="" type="checkbox"/>	Upper limit value. The alarm is triggered if the value rises above the limit, and is reset with upper lower limit value plus hysteresis.

Step 0 To 29 By 512 1024

HYS.3	r/w	base 1dP	130135370 17685	Float	0...3200 <input type="checkbox"/>	Hysteresis of the limit value. Switching difference for upper and lower limit value. The limit value must change by this amount (rise above upper limit or fall below lower limit) before the limit value alarm is reset.
-------	-----	-------------	--------------------	-------	-----------------------------------	---

Step 0 To 29 By 512 1024

• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
Lim 3	r	base 1dP	130335374 17687	Enum	<i>Enum_LimStatus</i>	Limit value status: No alarm present or stored.

Step 0 To 29 By 512 1024

0	no alarm
1	latched alarm
2	A limit value has been exceeded.

**6 Lim3**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
Fcn.3	r/w	base 1dP	130435376 17688	Enum	<i>Enum_Fcn</i>	Activation and adjustment of the limit value alarm (e.g. for input circuit monitoring), e.g. with/without storage.

Step 0 To 29 By 512 1024

0	No limit value monitoring.
1	measured value monitoring. The alarm signal is generated, if the limit is exceeded. If the measured value is within the limits (including hysteresis) again, this alarm signal is resetted.
2	Measured value monitoring + alarm status latch. An alarm signal is generated, if the limit is exceeded. A latched alarm signal remains latched until it is manually resetted.



## 6 Lim3

### • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description	
Src.3	r/w	base 1dP	130535378 17689	Enum	Enum_Src_I	Source for limit value. Selection of which value is to be monitored.	
Step 0 To 29 By 512 1024						0	Process value = absolute alarm
						1	control deviation xw (process value - set-point)
						2	Control deviation Xw (= relative alarm) with suppression during start-up and setpoint changes.
						4	effective set-point Weff
						5	correcting variable y (controller output)
						6	control variable deviation xw (process variable - setpoint internal) = relative alarm to SP internal, e. g. ramp or start-up circuit. Note: The SP internal is monitored, which is the target set-point of a ramp, not the changing effective SP.
						7	Control deviation Xw (= relative alarm) with suppression during start-up and setpoint changes. Limit value monitoring is continued as soon as the control deviation comes within the alarm limits again, at the latest after 10 * Tn.

### • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
L.3	r/w	base 1dP	130935386 17693	Float	-3000...3200 <input checked="" type="checkbox"/>	Lower limit value. The alarm is triggered if the value falls below the limit, and is reset with lower limit value plus hysteresis.
Step 0 To 29 By 512 1024						
H.3	r/w	base 1dP	131035388 17694	Float	-3000...3200 <input checked="" type="checkbox"/>	Upper limit value. The alarm is triggered if the value rises above the limit, and is reset with upper lower limit value plus hysteresis.
Step 0 To 29 By 512 1024						
HYS.3	r/w	base 1dP	131135390 17695	Float	0...3200 <input type="checkbox"/>	Hysteresis of the limit value. Switching difference for upper and lower limit value. The limit value must change by this amount (rise above upper limit or fall below lower limit) before the limit value alarm is reset.
Step 0 To 29 By 512 1024						

### • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description	
Lim 3	r	base 1dP	131335394 17697	Enum	Enum_LimStatus	Limit value status: No alarm present or stored.	
Step 0 To 29 By 512 1024						0	no alarm
						1	latched alarm
						2	A limit value has been exceeded.

## 7 LOGI

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SP.2	r/w	base 1dP	148435736 17868	Enum	Enum_dInP_Var	Source of the control signal for activating the second (safety) setpoint (SP.2=) W2. Note: W2 is not restricted by the setpoint limits.
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible) 1 Switchover via the defined digital input.
mAn	r/w	base 1dP	148635740 17870	Enum	Enum_dInP_Var	Source of the control signal for auto/manual switchover. In the automatic mode, the controller is in charge. In the manual mode, the outputs can be varied independently of the process.
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible) 1 Switchover via the defined digital input.
C.oFF	r/w	base 1dP	148735742 17871	Enum	Enum_dInP_Var	Source of the control signal for disabling all the controller outputs. Note: Forcing has priority, and remains active; alarm processing also remains active.
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible) 1 Switchover via the defined digital input.
booS	r/w	base 1dP	148935746 17873	Enum	Enum_dInP_Var	Source of the control signal for activating the boost function: The setpoint is increased by the value SP.bo for the duration t.bo. The boost function causes a brief setpoint increase, which is used to clear blocked channels from 'frozen' material in a hot runner system.
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible) 1 Switchover via the defined digital input.
Pid.2	r/w	base 1dP	149035748 17874	Enum	Enum_dInP_Var	Source of the control signal for switchover between the two parameter sets. The second parameter set is complete, and comprises Pb (= proportional band), ti (= integral action time), and td (= derivative action time) for heating and for cooling. All other control parameters, e.g. the switching duty cycles, are valid for both parameter sets.
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible) 1 Switchover via the defined digital input.
Err.r	r/w	base 1dP	148835744 17872	Enum	Enum_dInP4	Source of the control signal for resetting all stored entries in the error list (the list contains all error messages and alarms). If an alarm is still present, i.e. the source of trouble has not been remedied, stored alarms cannot be acknowledged (reset).
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible)
Y2	r/w	base 1dP	148535738 17869	Enum	Enum_dInP4	Source of the control signal for activating the second positioning output Y2. Activated Y2 = positioner control. Caution: The parameter 'positioning output Y2' must not be confused with the controller output Y2!
Step 0 To 29 By 512 1024						0 no function (switch-over via interface is possible)

## 7 LOGI

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description	
A.Man	r/w	base 1dP	1496 17880	35760	Int	0...1 <input type="checkbox"/>	Signal for activating manual operation. In the manual mode, the controller provides output signals independent of the process.
Step 0 To 29 By 512 1024							
A.Res	r/w	base 1dP	1498 17882	35764	Int	0...1 <input type="checkbox"/>	Signal for resetting the entire error list. The error list contains all errors that are reported, e.g. device faults and limit values. It also contains queued as well as stored errors after their correction. The reset acknowledges all errors, whereby queued errors will reappear after the next error detection (measurement).
Step 0 To 29 By 512 1024							
A.Sig	r/w	base 1dP	1502 17886	35772	Int	0...255 <input type="checkbox"/>	Summary of all control signals.
Step 0 To 29 By 512 1024							
Bit 0 W/W2 0 = W; 1 = W2 Bit 1 Par1/2 0 = Param.1; 1 = Param.2 Bit 2 Coff 0 = On; 1 = Off Bit 3 Boost 0 = Normal; 1 = Boost Bit 4 A/M 0 = Automatic; 1 = Manual Bit 5 Y/Y2 0 = Y; 1 = Y2 Bit 6 AlarmReset 0 = Normal; 1 = Reset							
Boost	r/w	base 1dP	1500 17884	35768	Int	0...1 <input type="checkbox"/>	Signal for activating the boost function. The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
Step 0 To 29 By 512 1024							
C.Off	r/w	base 1dP	1497 17881	35762	Int	0...1 <input type="checkbox"/>	Signal for disabling all the controller outputs. Note: Forcing has priority; alarm processing remains active.
Step 0 To 29 By 512 1024							
C.Steuer	r/w	base 1dP	1503 17887	35774	Int	0...65535 <input type="checkbox"/>	The control word contains the controller settings required by the user to determine the sequence of their activation, e.g. switchover after manual operation or start of the self-tuning function.
Step 0 To 29 By 512 1024							
Bit 0 W/W2 0 = W; 1 = W2 Bit 1 Par1/2 0 = Param.1; 1 = Param.2 Bit 2 Coff 0 = On; 1 = Off Bit 3 Boost 0 = Normal; 1 = Boost Bit 4 A/M 0 = Automatic; 1 = Manual Bit 5 Y/Y2 0 = Y; 1 = Y2 Bit 6 AlarmReset 0 = Normal; 1 = Reset Bits 7 - 13 Not used Bit 14 Start of self-tuning 0 = Stop; 1 = Start Bit 15 The controller's parameters have been changed by the self-tuning function. 0 = Not changed; 1 = Changed							

## 7 LOGI

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
P.1_2	r/w	base 1dP	150135770 17885	Int	0...1 <input type="checkbox"/>	Switch-over of parameter set. The 2nd parameter set contains one complete set each of Pb (= proportional band), ti (= integral action time), and td (= derivative action time) for heating and for cooling. All other control parameters, such as switching duty cycles, are valid for both parameter sets.

Step 0 To 29 By 512 1024

SP.SP2	r/w	base 1dP	149435756 17878	Int	0...1 <input type="checkbox"/>	Signal for activating the second (safety) setpoint (SP.2=W2. Note: Setpoint W2 is not restricted by the setpoint limits
--------	-----	-------------	--------------------	-----	--------------------------------	--

Step 0 To 29 By 512 1024

Y.Y2	r/w	base 1dP	149535758 17879	Int	0...1 <input type="checkbox"/>	Signal for activating the 2nd output value Y2. With selected Y2, the output is operated as a positioner. Caution: Do not confuse the parameter 'fixed output Y2' with the controller output Y2!
------	-----	-------------	--------------------	-----	--------------------------------	---

Step 0 To 29 By 512 1024

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
FrEq	r/w	base 1dP	5032868 16434	Enum	<i>Enum_FrEq</i>	Switchover of the applied mains frequency 50 / 60 Hz, thereby better adaptation of the input filter for hum suppression.
					0	Mains frequency is 50 Hz.
					1	Mains frequency is 60 Hz.

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
M.SP2	r/w	base 1dP	51 32870 16435	Enum	<i>Enum_Modul</i>	No. of the module that is used for switchover to the second (safety) setpoint SP2 (= W2). Note: W2 is not subjected to the adjusted setpoint limits
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

I.SP2	r/w	base 1dP	52 32872 16436	Enum	<i>Enum_Input_Index</i>	Input of the selected module that is used for switchover to the second (safety) setpoint SP2 (= W2). Note: W2 is not subjected to the adjusted setpoint limits
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
Fn.SP2	r/w	base 1dP	5332874 16437	Enum	Enum_diFn	Switching behaviour of the digital input for switchover of W/W2 (positive or negative edge / pulse). Switchover to the second (safety) setpoint W2. Note: W2 is not subjected to the adjusted setpoint limits.
					0	Basic setting 'Off': A permanent positive signal switches this function 'On', which is connected to the digital input. Removal of the signal switches the function 'Off' again.
					1	Basic setting 'On': A permanent positive signal switches this function 'Off', which is connected to the digital input. Removal of the signal switches the function 'On' again.
					2	Push-button function. Basic setting 'Off'. Only positive signals are effective. The first positive signal switches 'On'. Removal of the signal is necessary before the next positive signal can switch 'Off'.
f.SP2	r/w	base 1dP	5432876 16438	Enum	ENUM_ForcingEnable	Forcing of input for switchover to the second (safety) setpoint SP2 (= W2). Forcing involves the external operation of a controller input. The controller takes over this input value (preset value for controller inputs from a superordinate system, e.g. for a function test.) Note: W2 is not subjected to the adjusted setpoint limits
					0	No forcing. The value is read by the digital input.
					1	Forcing is active. The value for this input is provided by the external PLC.
M.Pid2	r/w	base 1dP	5532878 16439	Enum	Enum_Modul	No. of the module that is used for parameter switchover. The second parameter set contains all the necessary values for heating and cooling: Pb (= proportional band), ti (= integral action time) and td (= derivative action time). All other control parameters, such as switching duty cycles, are valid for both parameter sets.
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.Pid2	r/w	base 1dP	56 32880 16440	Enum	<i>Enum_Input_Inde x</i>	Input of the selected module that is used for parameter switchover. The second parameter set contains all the necessary values for heating and cooling: Pb (= proportional band), ti (= integral action time) and td (= derivative action time). All other control parameters, such as switching duty cycles, are valid for both parameter sets.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16
Fn.Pid2	r/w	base 1dP	57 32882 16441	Enum	<i>Enum_diFn</i>	Switching behaviour of the digital input for changing the parameter set (positive or negative edge / pulse). The second parameter set contains all the necessary values both for heating and cooling: Pb (= proportional band), ti (= integral action time) and td (= derivative action time). All other control parameters, such as switching duty cycles, are valid for both parameter sets.
					0	Basic setting 'Off': A permanent positive signal switches this function 'On', which is connected to the digital input. Removal of the signal switches the function 'Off' again.
					1	Basic setting 'On': A permanent positive signal switches this function 'Off', which is connected to the digital input. Removal of the signal switches the function 'On' again.
					2	Push-button function. Basic setting 'Off'. Only positive signals are effective. The first positive signal switches 'On'. Removal of the signal is necessary before the next positive signal can switch 'Off'.
f.Pid2	r/w	base 1dP	58 32884 16442	Enum	<i>ENUM_ForingEna ble</i>	Forcing of input for parameter switchover. The second parameter set contains all the necessary values for heating and cooling: Pb (= proportional band), ti (= integral action time) and td (= derivative action time). All other control parameters, such as switching duty cycles, are valid for both parameter sets. Forcing involves the external operation of a controller input. The controller takes over this input value (preset value for controller inputs from a superordinate system, e.g. for a function test.)
					0	No forcing. The value is read by the digital input.
					1	Forcing is active. The value for this input is provided by the external PLC.

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
M.CoFF	r/w	base 1dP	5932886 16443	Enum	<i>Enum_Modul</i>	Input of the selected module that is used to switch off the controller outputs. During start-up, all outputs are switched off. Note: Forcing has priority and remains active, alarm processing also remains active.
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

I.CoFF	r/w	base 1dP	6032888 16444	Enum	<i>Enum_Input_Index</i>	Input of the selected module that is used to switch off the controller outputs. During start-up, all outputs are switched off. Note: Forcing has priority and remains active, alarm processing also remains active.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16



## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
Fn.CoFF	r/w	base 1dP	61 32890 16445	Enum	<i>Enum_diFn</i>	Switching behaviour of the digital input for controller switch-off (positive or negative edge / pulse). If activated, all the outputs are switched off. Note: Forcing has priority and remains active, alarm processing also remains active.
					0	Basic setting 'Off': A permanent positive signal switches this function 'On', which is connected to the digital input. Removal of the signal switches the function 'Off' again.
					1	Basic setting 'On': A permanent positive signal switches this function 'Off', which is connected to the digital input. Removal of the signal switches the function 'On' again.
					2	Push-button function. Basic setting 'Off'. Only positive signals are effective. The first positive signal switches 'On'. Removal of the signal is necessary before the next positive signal can switch 'Off'.
f.CoFF	r/w	base 1dP	62 32892 16446	Enum	<i>ENUM_ForcingEnable</i>	Forcing of controller 'off' input. If activated, all controller outputs are switched off. Note: Forcing has priority and remains active; alarm processing also remains active. Forcing involves the external operation of a controller input. The controller takes over this input value (preset value for controller inputs from a superordinate system, e.g. for a function test.)
					0	No forcing. The value is read by the digital input.
					1	Forcing is active. The value for this input is provided by the external PLC.
M.booS	r/w	base 1dP	63 32894 16447	Enum	<i>Enum_Modul</i>	No. of the module that is used to activate the boost function. The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
l.booS	r/w	base 1dP	64 32896 16448	Enum	<i>Enum_Input_Inde</i> x	Input of the selected module that is used to activate the boost function. The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16
Fn.booS	r/w	base 1dP	65 32898 16449	Enum	<i>Enum_diFn</i>	Switching behaviour of the digital input for activating the boost function (positive or negative edge / pulse). The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
					0	Basic setting 'Off': A permanent positive signal switches this function 'On', which is connected to the digital input. Removal of the signal switches the function 'Off' again.
					1	Basic setting 'On': A permanent positive signal switches this function 'Off', which is connected to the digital input. Removal of the signal switches the function 'On' again.
					2	Push-button function. Basic setting 'Off'. Only positive signals are effective. The first positive signal switches 'On'. Removal of the signal is necessary before the next positive signal can switch 'Off'.
f.booS	r/w	base 1dP	66 32900 16450	Enum	<i>ENUM_ForcingEna</i> <i>ble</i>	Forcing of the boost function input. Forcing involves the external operation of a controller input. The controller takes over this input value (preset value for controller inputs from a superordinate system, e.g. for a function test.). The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
					0	No forcing. The value is read by the digital input.
					1	Forcing is active. The value for this input is provided by the external PLC.

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
M.mAn	r/w	base 1dP	67 32902 16451	Enum	Enum_Modul	No. of the module that is used for switchover between manual and automatic modes. During automatic operation, the controller is in charge; with manual operation, the outputs are changed independently of the process value.

0	Not active
1	device
2	module 1
3	module 2
4	module 3
5	module 4
6	module 5
7	module 6
8	module 7
9	module 8
10	module 9
11	module 10
12	module 11
13	module 12
14	module 13
15	module 14
16	module 15
17	module 16
18	module 17
19	module 18
20	module 19
21	module 20

I.mAn	r/w	base 1dP	68 32904 16452	Enum	Enum_Input_Inde x	Input of the selected module that is used for switchover between manual and automatic modes. During automatic operation, the controller is in charge; with manual operation, the outputs are changed independently of the process value.
-------	-----	-------------	-------------------	------	----------------------	--

0	not active
1	input 1
2	input 2
3	input 3
4	input 4
5	input 5
6	input 6
7	input 7
8	input 8
9	input 9
10	input 10
11	input 11
12	input 12
13	input 13
14	input 14
15	input 15
16	input 16

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
Fn.mAn	r/w	base 1dP	6932906 16453	Enum	<i>Enum_diFn</i>	Switching behaviour of the digital input for auto/manual switchover (positive or negative edge / pulse). During automatic operation, the controller is in charge; with manual operation, the outputs are changed independently of the process value.

- |   |   |
|---|---|
| 0 | Basic setting 'Off': A permanent positive signal switches this function 'On', which is connected to the digital input. Removal of the signal switches the function 'Off' again.                               |
| 1 | Basic setting 'On': A permanent positive signal switches this function 'Off', which is connected to the digital input. Removal of the signal switches the function 'On' again.                                |
| 2 | Push-button function. Basic setting 'Off'. Only positive signals are effective. The first positive signal switches 'On'. Removal of the signal is necessary before the next positive signal can switch 'Off'. |

f.mAn	r/w	base 1dP	7032908 16454	Enum	<i>ENUM_ForingEnable</i>	Forcing the input for auto/manual switchover. In the automatic mode, the controller is in charge, whilst in the manual mode the outputs are operated independently of the process. Forcing involves the external operation of a controller input. The controller takes over this input value (preset value for controller inputs from a superordinate system, e.g. for a function test.)
-------	-----	-------------	------------------	------	--------------------------	--

- |   |  |
|---|--|
| 0 | No forcing. The value is read by the digital input.                          |
| 1 | Forcing is active. The value for this input is provided by the external PLC. |

InpModTk	r/w	base 1dP	26033288 16644	Enum	<i>Enum_Modul</i>	Module that supplies the input signal for determining the CJC.
----------	-----	-------------	-------------------	------	-------------------	--

- |    |            |
|----|------------|
| 0  | Not active |
| 1  | device     |
| 2  | module 1   |
| 3  | module 2   |
| 4  | module 3   |
| 5  | module 4   |
| 6  | module 5   |
| 7  | module 6   |
| 8  | module 7   |
| 9  | module 8   |
| 10 | module 9   |
| 11 | module 10  |
| 12 | module 11  |
| 13 | module 12  |
| 14 | module 13  |
| 15 | module 14  |
| 16 | module 15  |
| 17 | module 16  |
| 18 | module 17  |
| 19 | module 18  |
| 20 | module 19  |
| 21 | module 20  |

**8 ohnE**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
InpIndTk	r/w	base 1dP	261 33290 16645	Enum	<i>Enum_Input_Inde</i> <i>x</i>	Selection of an input for the CJC in the device or module of the internal bus.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16

## 8 ohnE

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
S.tYPTk	r/w	base 1dP	26233292 16646	Enum	Enum_StYP_I	Selection of the connected sensor type or input signal, e.g. thermocouple type J. The input signals can be scaled.
					0	thermocouple type L (-100...900°C, -148...1652°F), Fe-CuNi DIN
					1	thermocouple type J (-100...1200°C, -148...2192°F), Fe-CuNi
					2	thermocouple type K (-100...1350°C, -148...2462°F), NiCr-Ni
					3	thermocouple type N (-100...1300°C, -148...2372°F), Nicrosil-Nisil
					4	thermocouple type S (0...1760°C, 32...3200°F), PtRh-Pt10%
					5	thermocouple type R (0...1760°C, 32...3200°F), PtRh-Pt13%
					6	thermocouple type T (-200...400°C, -328...752°F), Cu-CuNi
					7	thermocouple type C (0...2315°C, 32...4199°F), W5%Re-W26%Re
					8	thermocouple type D (0...2315°C, 32...4199°F), W3%Re-W25%Re
					9	thermocouple type E (-100...1000°C, -148...1832°F), NiCr-CuNi
					10	thermocouple type B0/100...1820°C, 32/212...3308°F), PtRh-Pt6%
					11	thermocouple type W (0...2315°C, 32...4199°F)
					20	Pt100 (-200 ... 850°C, -140...1562°F)
					21	Pt 1000 (-200...850°C, -328...1562°F)
					22	Ni 100 (-60...180°C, -76...356°F)
					23	Ni 1000 (-60...180°C, -76...356°F)
					24	KTY81-110 (-55...150°C, -67...302°F)
					25	KTY84 (-40...300°C, -104...572°F)
					26	Resistance : 0...400 Ohms
					27	Resistance : 0...450 Ohms
					28	Resistance : 0...4000 Ohms
					30	current : 0...20 mA
					31	current : -20...20 mA
					32	current : 4...20 mA
					33	current : 0...40 mA
					34	current : -40...40 mA
					40	voltage : 0...5 V
					41	voltage : -5...5 V
					42	voltage : 0...10 V
					43	voltage : -10...10 V
					44	voltage : 0...25 V
					45	voltage : -25...25 V
					46	voltage : 0...50 V
					47	Voltage : 0...70 mV
					48	Voltage: -15...+85 mV

ForcingTk	r/w	base 1dP	26333294 16647	Enum	Enum_Forcing	Activates forcing of the input. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
					0	No forcing. The value is read by the digital input.
					1	Forcing is active, the value is written via serial interface.

## 8 ohnE

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
InLTk	r/w	base 1dP	267 33302 16651	Float	-3000...3200	<input type="checkbox"/> Input value of the lower scaling point for the external temperature compensation. Depending on sensor type, scaling of the display can be applied to the output value by means of the Parameter Level. Definition of the input value for the lower scaling point is done using the corresponding electrical value, e.g. 4 mA.
OuLTk	r/w	base 1dP	268 33304 16652	Float	-3000...3200	<input checked="" type="checkbox"/> Display value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the lower scaling point, e.g. 4 mA is displayed as 2 [pH].
InHTk	r/w	base 1dP	269 33306 16653	Float	-3000...3200	<input type="checkbox"/> Input value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the upper scaling point (e.g. 20 mA) is done using the corresponding electrical value.
OuHTk	r/w	base 1dP	270 33308 16654	Float	-3000...3200	<input type="checkbox"/> Display value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the upper scaling point, e.g. 20 mA is displayed as 12 [pH].
Conf	r/w	base 1dP	132770 16385	Int	0...2	<input type="checkbox"/> Start/Stop and abortion of the configuration mode 0 = End of configuration 1 = Start of configuration 2 = Abort configuration

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
CAH	r	base 1dP	390 33548 16774	Long	0...0	<input type="checkbox"/> Total operating hours. Count starts with the first switch-on. Internal test routine. Is stored and displayed not more than once per hour.
Diag	r	base 1dP	382 33532 16766	Int	0...0	<input type="checkbox"/> Result of diagnosis. Any faults detected during the self-test for data, RAM, processor, and EEPROM, as well as an exceeded count for the operating hours (maintenance period) and no. of switching cycles (maintenance period) are stored. Can be reset by acknowledgement.
DigEin	r	base 1dP	72 32912 16456	Int	0...31	<input type="checkbox"/> Bit-wise coded status of the digital inputs
Bit 0 Status of W/W2 switchover Bit 1 Status of parameter switchover Bit 2 Status of controller disabling (Coff) Bit 3 Status of boost activation Bit 4 Status of auto/manual switchover						
EE.Ver	r	base 1dP	381 33530 16765	Int	0...0	<input type="checkbox"/> EEPROM version

## 8 ohnE

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
ErrInterbu	r	base 1dP	38733542 16771	Long	0...0 <input type="checkbox"/>	Fault counter of the InterBus.
ErrInternal	r	base 1dP	38833544 16772	Long	0...0 <input type="checkbox"/>	Fault counter of the internal bus.
F.DigEin	r/w	base 1dP	7132910 16455	Int	0...31 <input type="checkbox"/>	Forcing of digital inputs. Forcing involves the external operation of at least one input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
Bit 0 Forcing of W/W2 switchover Bit 1 Forcing of parameter switchover Bit 2 Forcing of controller disabling (Coff) Bit 3 Forcing of boost activation Bit 4 Forcing of auto/manual switchover						
F.InpTk	r/w	base 1dP	27833324 16662	Float	-3000...3200 <input type="checkbox"/>	Forcing of CJC input. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
FailTk	r	base 1dP	27733322 16661	Enum	<i>Enum_Input</i>	Nature of the fault at the CJC input.
0 no error 1 Break of the input circuit. Possible remedy: Check connections, replace sensor. 2 Incorrect polarity of the input circuit. Possible remedy: Reverse the input connections. 3 Undefined state. 4 Input short circuit. Possible remedy: Check connections, replace sensor.						
GAda.S1	r/w	base 1dP	16033088 16544	Enum	<i>Enum_GrpAdaStart</i>	For the purpose of Group self-tuning, a controller can be assigned to one of the four independently operating Groups. Within the Group, the zones with self-tuning during heating are all started together, followed by the zones with self-tuning during cooling. Zones with self-tuning at setpoint, and disabled zones are not coordinated.
0 'Stop' of the Group self-tuning causes the attempt to be aborted, and the controller returns to normal operation with the previous parameter settings. 1 All channels assigned to self-tuning during start-up are coordinated, i.e. they are delayed until every channel has reached a steady state (PIR = process at rest). There is not more than 1 cycle period between the first and the last start (max. 3200 s). With 3-point controllers there is an automatic second coordination for 'cooling'.						



## 8 ohnE

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description	
GAda.S2	r/w	base 1dP	161 16545	33090	Enum	<i>Enum_GrpAdaSta</i> <i>rt</i>	For the purpose of Group self-tuning, a controller can be assigned to one of the four independently operating Groups. Within the Group, the zones with self-tuning during heating are all started together, followed by the zones with self-tuning during cooling. Zones with self-tuning at setpoint, and disabled zones are not coordinated.

0 'Stop' of the Group self-tuning causes the attempt to be aborted, and the controller returns to normal operation with the previous parameter settings.

1 All channels assigned to self-tuning during start-up are coordinated, i.e. they are delayed until every channel has reached a steady state (PIR = process at rest). There is not more than 1 cycle period between the first and the last start (max. 3200 s). With 3-point controllers there is an automatic second coordination for 'cooling'.

GAda.S3	r/w	base 1dP	162 16546	33092	Enum	<i>Enum_GrpAdaSta</i> <i>rt</i>	For the purpose of Group self-tuning, a controller can be assigned to one of the four independently operating Groups. Within the Group, the zones with self-tuning during heating are all started together, followed by the zones with self-tuning during cooling. Zones with self-tuning at setpoint, and disabled zones are not coordinated.
---------	-----	-------------	--------------	-------	------	------------------------------------	--

0 'Stop' of the Group self-tuning causes the attempt to be aborted, and the controller returns to normal operation with the previous parameter settings.

1 All channels assigned to self-tuning during start-up are coordinated, i.e. they are delayed until every channel has reached a steady state (PIR = process at rest). There is not more than 1 cycle period between the first and the last start (max. 3200 s). With 3-point controllers there is an automatic second coordination for 'cooling'.

GAda.S4	r/w	base 1dP	163 16547	33094	Enum	<i>Enum_GrpAdaSta</i> <i>rt</i>	For the purpose of Group self-tuning, a controller can be assigned to one of the four independently operating Groups. Within the Group, the zones with self-tuning during heating are all started together, followed by the zones with self-tuning during cooling. Zones with self-tuning at setpoint, and disabled zones are not coordinated.
---------	-----	-------------	--------------	-------	------	------------------------------------	--

0 'Stop' of the Group self-tuning causes the attempt to be aborted, and the controller returns to normal operation with the previous parameter settings.

1 All channels assigned to self-tuning during start-up are coordinated, i.e. they are delayed until every channel has reached a steady state (PIR = process at rest). There is not more than 1 cycle period between the first and the last start (max. 3200 s). With 3-point controllers there is an automatic second coordination for 'cooling'.

## 8 ohnE

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Hw.Op	r	base 1dP	20033168 16584	Enum	Enum_InpV	Device hardware option 0000 0000 0000 0YXX X X = 2: Thermocouple input X X = 3: Resistive input Y = 0: 8 or 6-channel device Y = 1: 4-channel device
					2	VARIO T8/UTH: Basic unit with max. 30 control loops, 8 inputs for thermocouples, 8 outputs.
					3	VARIO T6/RTD: Basic unit with max. 30 control loops, 6 inputs for thermocouples, 6 outputs.
					6	VARIO T4/UTH: Basic unit with max. 4 control loops, 8 inputs for thermocouples, 8 outputs.
					7	VARIO T4/RTD: Basic unit with max. 4 control loops, 4 inputs for Pt 100, 6 outputs.
Id.NrH	r	base 1dP	37033508 16754	Int	0...0	<input type="checkbox"/> More significant part of the device Ident number.
Id.NrL	r	base 1dP	37133510 16755	Int	0...0	<input type="checkbox"/> Less significant part of the device Ident number.
Id.NrZ	r	base 1dP	37233512 16756	Int	0...0	<input type="checkbox"/> Sequential Ident number of the device.
Int.Tmp	r	base 1dP	38033528 16764	Int	0...0	<input type="checkbox"/> Max. measured operating temperature. Internal test routine.
O.Ver	r	base 1dP	20233172 16586	Int	0...255	<input type="checkbox"/> Operating version (numeric value). For the correct interaction of E-Tool and device, the software version and operating version must match.
Oem.NrH	r	base 1dP	37333514 16757	Int	0...0	<input type="checkbox"/> More significant part of the device OEM no.
Oem.NrL	r	base 1dP	37433516 16758	Int	0...0	<input type="checkbox"/> Less significant part of the device OEM no.
PVTk	r	base 1dP	27533318 16659	Float	-3000...3200	<input type="checkbox"/> Measurement value of CJC input, after measurement value correction, e.g. with offset or 2-point correction, and scaled.
S.Ver	r	base 1dP	20133170 16585	Int	0...255	<input type="checkbox"/> Software version XY Major and Minor Release (e.g. 21 = Version 2.1). The software version specifies the firmware in the unit. For the correct interaction of E-Tool and device, it must match the operating version (OpVersion) in the E-Tool.
Sub.Ver	r	base 1dP	20433176 16588	Int	0...255	<input type="checkbox"/> Software sub-version

**8 ohnE**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
Sw.Nr	r	base 1dP	375 33518 16759	Int	0...0 <input type="checkbox"/>	Digits 7 to 12 of the software order number.
T.CodeNr	r	base 1dP	360 33488 16744	Text	0...2 <input type="checkbox"/>	15-digit order number of the device.
XphysTk	r	base 1dP	276 33320 16660	Float	-3000...3200 <input type="checkbox"/>	Measurement value (uncorrected) of CJC input, before measurement value correction, read directly from the input.

**9 ohnE2**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
InpModP1	r/w	base 1dP	280 33328 16664	Enum	<i>Enum_Modul</i>	Module that supplies the input signal for outer conducto 1.

0	Not active
1	device
2	module 1
3	module 2
4	module 3
5	module 4
6	module 5
7	module 6
8	module 7
9	module 8
10	module 9
11	module 10
12	module 11
13	module 12
14	module 13
15	module 14
16	module 15
17	module 16
18	module 17
19	module 18
20	module 19
21	module 20

## 9 ohnE2

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
InpIndP1	r/w	base 1dP	281 33330 16665	Enum	<i>Enum_Input_Inde</i> <i>x</i>	Selection of an input for outer conductor 1 in the device or module of the internal bus.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16

## 9 ohnE2

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
S.tYPP1	r/w	base 1dP	282 33332 16666	Enum	<i>Enum_StYP_I</i>	Selection of the connected sensor type or input signal, e.g. thermocouple type J. The input signals can be scaled.
					0	thermocouple type L (-100...900°C, -148...1652°F), Fe-CuNi DIN
					1	thermocouple type J (-100...1200°C, -148...2192°F), Fe-CuNi
					2	thermocouple type K(-100...1350°C, -148...2462°F), NiCr-Ni
					3	thermocouple type N (-100...1300°C, -148...2372°F), Nicrosil-Nisil
					4	thermocouple type S (0...1760°C, 32...3200°F), PtRh-Pt10%
					5	thermocouple type R (0...1760°C, 32...3200°F), PtRh-Pt13%
					6	thermocouple type T (-200...400°C, -328...752°F), Cu-CuNi
					7	thermocouple type C (0...2315°C, 32...4199°F), W5%Re-W26%Re
					8	thermocouple type D (0...2315°C, 32...4199°F), W3%Re-W25%Re
					9	thermocouple type E (-100...1000°C, -148...1832°F), NiCr-CuNi
					10	thermocouple type B0/100...1820°C, 32/212...3308°F), PtRh-Pt6%
					11	thermocouple type W (0...2315°C, 32...4199°F)
					20	Pt100 (-200 ... 850°C, -140...1562°F)
					21	Pt 1000 (-200...850°C, -328...1562°F)
					22	Ni 100 (-60...180°C, -76...356°F)
					23	Ni 1000 (-60...180°C, -76...356°F)
					24	KTY81-110 (-55...150°C, -67...302°F)
					25	KTY84 (-40...300°C, -104...572°F)
					26	Resistance : 0...400 Ohms
					27	Resistance : 0...450 Ohms
					28	Resistance : 0...4000 Ohms
					30	current : 0...20 mA
					31	current : -20...20 mA
					32	current : 4...20 mA
					33	current : 0...40 mA
					34	current : -40...40 mA
					40	voltage : 0...5 V
					41	voltage : -5...5 V
					42	voltage : 0...10 V
					43	voltage : -10...10 V
					44	voltage : 0...25 V
					45	voltage : -25...25 V
					46	voltage : 0...50 V
					47	Voltage : 0...70 mV
					48	Voltage: -15...+85 mV

ForcingP1	r/w	base 1dP	283 33334 16667	Enum	<i>Enum_Forcing</i>	Activates forcing of the input. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
					0	No forcing. The value is read by the digital input.
					1	Forcing is active, the value is written via serial interface.

## 9 ohnE2

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
InLP1	r/w	base 1dP	287 33342 16671	Float	-3000...3200	<input type="checkbox"/> Input value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the lower scaling point (e.g. 4 mA) is done using the corresponding electrical value.
OuLP1	r/w	base 1dP	288 33344 16672	Float	-3000...3200	<input checked="" type="checkbox"/> Display value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the lower scaling point, e.g. 4 mA is displayed as 2 [pH].
InHP1	r/w	base 1dP	289 33346 16673	Float	-3000...3200	<input type="checkbox"/> Input value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the upper scaling point (e.g. 20 mA) is done using the corresponding electrical value.
OuHP1	r/w	base 1dP	290 33348 16674	Float	-3000...3200	<input type="checkbox"/> Display value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the upper scaling point, e.g. 20 mA is displayed as 12 [pH].

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
F.InpP1	r/w	base 1dP	298 33364 16682	Float	-3000...3200	<input type="checkbox"/> Forcing of Input P1. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
FailP1	r	base 1dP	297 33362 16681	Enum	<i>Enum_Input</i>	Nature of the fault at input P1.

0 no error

1 Break of the input circuit.  
Possible remedy: Check connections, replace sensor.2 Incorrect polarity of the input circuit.  
Possible remedy: Reverse the input connections.

3 Undefined state.

4 Input short circuit.  
Possible remedy: Check connections, replace sensor.

PVP1	r	base 1dP	295 33358 16679	Float	-3000...3200	<input type="checkbox"/> Measurement value for phase conductor 1, after measurement value correction, e.g. with offset or 2-point correction, and scaled.
XphysP1	r	base 1dP	296 33360 16680	Float	-3000...3200	<input type="checkbox"/> Measurement value of Input P1, before measurement value correction, read directly from the input.

**10 ohnE3**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
InpModP2	r/w	base 1dP	300 33368 16684	Enum	<i>Enum_Modul</i>	Module that supplies the input signal for outer conductor 2.
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

InpIndP2	r/w	base 1dP	301 33370 16685	Enum	<i>Enum_Input_Index</i>	Selection of an input for phase conductor 2 in the device or module of the internal bus.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16

## 10 ohnE3

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
S.tYPP2	r/w	base 1dP	30233372 16686	Enum	Enum_StYP_I	Selection of the connected sensor type or input signal, e.g. thermocouple type J. The input signals can be scaled.
					0	thermocouple type L (-100...900°C, -148...1652°F), Fe-CuNi DIN
					1	thermocouple type J (-100...1200°C, -148...2192°F), Fe-CuNi
					2	thermocouple type K (-100...1350°C, -148...2462°F), NiCr-Ni
					3	thermocouple type N (-100...1300°C, -148...2372°F), Nicrosil-Nisil
					4	thermocouple type S (0...1760°C, 32...3200°F), PtRh-Pt10%
					5	thermocouple type R (0...1760°C, 32...3200°F), PtRh-Pt13%
					6	thermocouple type T (-200...400°C, -328...752°F), Cu-CuNi
					7	thermocouple type C (0...2315°C, 32...4199°F), W5%Re-W26%Re
					8	thermocouple type D (0...2315°C, 32...4199°F), W3%Re-W25%Re
					9	thermocouple type E (-100...1000°C, -148...1832°F), NiCr-CuNi
					10	thermocouple type B0/100...1820°C, 32/212...3308°F), PtRh-Pt6%
					11	thermocouple type W (0...2315°C, 32...4199°F)
					20	Pt100 (-200 ... 850°C, -140...1562°F)
					21	Pt 1000 (-200...850°C, -328...1562°F)
					22	Ni 100 (-60...180°C, -76...356°F)
					23	Ni 1000 (-60...180°C, -76...356°F)
					24	KTY81-110 (-55...150°C, -67...302°F)
					25	KTY84 (-40...300°C, -104...572°F)
					26	Resistance : 0...400 Ohms
					27	Resistance : 0...450 Ohms
					28	Resistance : 0...4000 Ohms
					30	current : 0...20 mA
					31	current : -20...20 mA
					32	current : 4...20 mA
					33	current : 0...40 mA
					34	current : -40...40 mA
					40	voltage : 0...5 V
					41	voltage : -5...5 V
					42	voltage : 0...10 V
					43	voltage : -10...10 V
					44	voltage : 0...25 V
					45	voltage : -25...25 V
					46	voltage : 0...50 V
					47	Voltage : 0...70 mV
					48	Voltage: -15...+85 mV

ForcingP2	r/w	base 1dP	30333374 16687	Enum	Enum_Forcing	Activates forcing of the input. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
					0	No forcing. The value is read by the digital input.
					1	Forcing is active, the value is written via serial interface.



## 10 ohnE3

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
InLP2	r/w	base 1dP	307 33382 16691	Float	-3000...3200	<input type="checkbox"/> Input value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the lower scaling point (e.g. 4 mA) is done using the corresponding electrical value.
OuLP2	r/w	base 1dP	308 33384 16692	Float	-3000...3200	<input checked="" type="checkbox"/> Display value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the lower scaling point, e.g. 4 mA is displayed as 2 [pH].
InHP2	r/w	base 1dP	309 33386 16693	Float	-3000...3200	<input type="checkbox"/> Input value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the upper scaling point (e.g. 20 mA) is done using the corresponding electrical value.
OuHP2	r/w	base 1dP	310 33388 16694	Float	-3000...3200	<input type="checkbox"/> Display value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the upper scaling point, e.g. 20 mA is displayed as 12 [pH].

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
F.InpP2	r/w	base 1dP	318 33404 16702	Float	-3000...3200	<input type="checkbox"/> Forcing of Input P2. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
FailP2	r	base 1dP	317 33402 16701	Enum	<i>Enum_Input</i>	Nature of the fault at input P2.

0 no error

1 Break of the input circuit.  
Possible remedy: Check connections, replace sensor.2 Incorrect polarity of the input circuit.  
Possible remedy: Reverse the input connections.

3 Undefined state.

4 Input short circuit.  
Possible remedy: Check connections, replace sensor.

PVP2	r	base 1dP	315 33398 16699	Float	-3000...3200	<input type="checkbox"/> Measurement value for phase conductor 2, after measurement value correction, e.g. with offset or 2-point correction, and scaled.
XphysP2	r	base 1dP	316 33400 16700	Float	-3000...3200	<input type="checkbox"/> Measurement value (uncorrected) of Input P2, before measurement value correction, read directly from the input.

## 11 ohnE4

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
InpModP3	r/w	base 1dP	32033408 16704	Enum	<i>Enum_Modul</i>	Module that supplies the input signal for outer conductor 3.
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

InpIndP3	r/w	base 1dP	32133410 16705	Enum	<i>Enum_Input_Inde x</i>	Selection of an input for outer conductor 3 in the device or module of the internal bus.
					0	not active
					1	input 1
					2	input 2
					3	input 3
					4	input 4
					5	input 5
					6	input 6
					7	input 7
					8	input 8
					9	input 9
					10	input 10
					11	input 11
					12	input 12
					13	input 13
					14	input 14
					15	input 15
					16	input 16

**11 ohnE4**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
S.tYPP3	r/w	base 1dP	322 33412 16706	Enum	<i>Enum_StYP_I</i>	Selection of the connected sensor type or input signal, e.g. thermocouple type J. The input signals can be scaled.
					0	thermocouple type L (-100...900°C, -148...1652°F), Fe-CuNi DIN
					1	thermocouple type J (-100...1200°C, -148...2192°F), Fe-CuNi
					2	thermocouple type K(-100...1350°C, -148...2462°F), NiCr-Ni
					3	thermocouple type N (-100...1300°C, -148...2372°F), Nicrosil-Nisil
					4	thermocouple type S (0...1760°C, 32...3200°F), PtRh-Pt10%
					5	thermocouple type R (0...1760°C, 32...3200°F), PtRh-Pt13%
					6	thermocouple type T (-200...400°C, -328...752°F), Cu-CuNi
					7	thermocouple type C (0...2315°C, 32...4199°F), W5%Re-W26%Re
					8	thermocouple type D (0...2315°C, 32...4199°F), W3%Re-W25%Re
					9	thermocouple type E (-100...1000°C, -148...1832°F), NiCr-CuNi
					10	thermocouple type B0/100...1820°C, 32/212...3308°F), PtRh-Pt6%
					11	thermocouple type W (0...2315°C, 32...4199°F)
					20	Pt100 (-200 ... 850°C, -140...1562°F)
					21	Pt 1000 (-200...850°C, -328...1562°F)
					22	Ni 100 (-60...180°C, -76...356°F)
					23	Ni 1000 (-60...180°C, -76...356°F)
					24	KTY81-110 (-55...150°C, -67...302°F)
					25	KTY84 (-40...300°C, -104...572°F)
					26	Resistance : 0...400 Ohms
					27	Resistance : 0...450 Ohms
					28	Resistance : 0...4000 Ohms
					30	current : 0...20 mA
					31	current : -20...20 mA
					32	current : 4...20 mA
					33	current : 0...40 mA
					34	current : -40...40 mA
					40	voltage : 0...5 V
					41	voltage : -5...5 V
					42	voltage : 0...10 V
					43	voltage : -10...10 V
					44	voltage : 0...25 V
					45	voltage : -25...25 V
					46	voltage : 0...50 V
					47	Voltage : 0...70 mV
					48	Voltage: -15...+85 mV

ForcingP3	r/w	base 1dP	323 33414 16707	Enum	<i>Enum_Forcing</i>	Activates forcing of the input. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
					0	No forcing. The value is read by the digital input.
					1	Forcing is active, the value is written via serial interface.

## 11 ohnE4

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
InLP3	r/w	base 1dP	32733422 16711	Float	-3000...3200	<input type="checkbox"/> Input value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the lower scaling point (e.g. 4 mA) is done using the corresponding electrical value.
OuLP3	r/w	base 1dP	32833424 16712	Float	-3000...3200	<input checked="" type="checkbox"/> Display value of the lower scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the lower scaling point, e.g. 4 mA is displayed as 2 [pH].
InHP3	r/w	base 1dP	32933426 16713	Float	-3000...3200	<input type="checkbox"/> Input value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The display of the input value of the upper scaling point (e.g. 20 mA) is done using the corresponding electrical value.
OuHP3	r/w	base 1dP	33033428 16714	Float	-3000...3200	<input type="checkbox"/> Display value of the upper scaling point. Depending on sensor type, the input value can be scaled to the required display value in the Parameter Level. The operator can change the display value of the upper scaling point, e.g. 20 mA is displayed as 12 [pH].

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
F.InpP3	r/w	base 1dP	33833444 16722	Float	-3000...3200	<input type="checkbox"/> Forcing of Input P3. Forcing involves the external operation of an input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
FailP3	r	base 1dP	33733442 16721	Enum	<i>Enum_Input</i>	Nature of the fault at input P3.

0 no error

1 Break of the input circuit.  
Possible remedy: Check connections, replace sensor.2 Incorrect polarity of the input circuit.  
Possible remedy: Reverse the input connections.

3 Undefined state.

4 Input short circuit.  
Possible remedy: Check connections, replace sensor.

PVP3	r	base 1dP	33533438 16719	Float	-3000...3200	<input type="checkbox"/> Measurement value for phase conductor 3, after measurement value correction, e.g. with offset or 2-point correction, and scaled.
XphysP3	r	base 1dP	33633440 16720	Float	-3000...3200	<input type="checkbox"/> Measurement value (uncorrected) of Input P3, before measurement value correction, read directly from the input.

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
StMod	r/w	base 1dP	13 32794 16397	Enum	<i>Enum_PowerOnContrOff</i>	This datum must be set, if it is necessary that the controllers are switched off after power-up. The controllers must then be activated via the interface.
					0	Controller outputs are not disabled on power-up; the previous state (before power off) is maintained.
					1	Controller outputs are disabled on power-up.
Unit	r/w	base 1dP	12 32792 16396	Enum	<i>Enum_Unit</i>	Physical unit (temperature), f.e. °C
					0	without unit
					1	°C
					2	°F
U.norm	r/w	base 1dP	73 32914 16457	Int	1...32000 <input checked="" type="checkbox"/>	The nominal supply voltage is required for voltage compensation by the heating current monitor. It is the supply voltage for the heater(s), usually 230 V in Europe. If the compensating function is activated the nominal voltage value defines the compensating amount to ensure the standardized heating power. This means that the indicated heating current only corresponds to the real heating current, if the supply voltage is the same as the nominal voltage.
Addr	r/w	base 1dP	170 33108 16554	Int	1...247 <input type="checkbox"/>	Address on the field bus interface Modbus 1 ... 247 PROFIBUS 1 ... 126 DeviceNet 0 ... 63 CANopen 1 ... 127
bAud	r/w	base 1dP	171 33110 16555	Enum	<i>Enum_Baud</i>	Bit rate of the interface (only visible with OPTION). The bit rate determines the transmission speed.
					0	2400 Baud
					1	4800 Baud
					2	9600 Baud
					3	19200 Baud
					4	38.400 bits/s
EthAdr.HH	r/w	base 1dP	175 33118 16559	Int	0...255 <input type="checkbox"/>	Ethernet address HH The address is a combination of the elements HH.H.L.LL
EthAdr.H	r/w	base 1dP	176 33120 16560	Int	0...255 <input type="checkbox"/>	Ethernet address H The address is a combination of the elements HH.H.L.LL
PrtY	r/w	base 1dP	172 33112 16556	Enum	<i>Enum_Parity</i>	Parity of data on the interface (only visible with OPTION). Simple possibility of checking that transferred data is correct.
					0	No parity, with 2 stop bits.
					1	even parity
					2	odd parity
					3	no parity (1 stop bit)

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
C.dEL	r/w	base 1dP	17433116 16558	Int	0...200	<input type="checkbox"/> For both interfaces, Modbus only. Additional acceptable delay time between 2 received bytes, before "end of message" is assumed. This time is needed if data is not transmitted continuously by the modem.
EthAdr.L	r/w	base 1dP	17733122 16561	Int	0...255	<input type="checkbox"/> Ethernet address net L The address is a combination of the elements HH.H.L.LL
dELY	r/w	base 1dP	17333114 16557	Int	0...200	<input type="checkbox"/> Response delay [ms] (only visible with OPTION). Additional delay time before the received message may be answered on the Modbus. (Might be necessary, if the same line is used for transmit/receive.)
EthAdr.LL	r/w	base 1dP	17833124 16562	Int	0...255	<input type="checkbox"/> Ethernet address net LL The address is a combination of the elements HH.H.L.LL
SubNet.H	r/w	base 1dP	17933126 16563	Int	0...255	<input type="checkbox"/> Ethernet SubNet mask HH The mask is a combination of the elements HH.H.L.LL
HW.Vers	r	base 1dP	20533178 16589	Int	0...32000	<input type="checkbox"/> Hardware identification: is entered via FU mode. 'Read only' via Modbus or InterBus.
SubNet.H	r/w	base 1dP	18033128 16564	Int	0...255	<input type="checkbox"/> Ethernet SubNet mask H The mask is a combination of the elements HH.H.L.LL
SubNet.L	r/w	base 1dP	18133130 16565	Int	0...255	<input type="checkbox"/> Ethernet SubNet mask L The mask is a combination of the elements HH.H.L.LL
SubNet.LL	r/w	base 1dP	18233132 16566	Int	0...255	<input type="checkbox"/> Ethernet SubNet mask LL The mask is a combination of the elements HH.H.L.LL

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	15 32798 16399	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module VARIO DI 4/24. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection +

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O



## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	16 32800 16400	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	17 32802 16401	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	18 32804 16402	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	19 32806 16403	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

P.Addr	r/w	base 1dP	19033148 16574	Int	1...247	<input type="checkbox"/> Address on the panel interface Modbus 1 ... 247
--------	-----	-------------	-------------------	-----	---------	---



## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	20 32808 16404	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

P.bAud	r/w	base 1dP	19133150 16575	Enum	Enum_Baud	Bit rate of the panel interface. The bit rate determines the transmission speed.
					0	2400 Baud
					1	4800 Baud
					2	9600 Baud
					3	19200 Baud
					4	38.400 bits/s

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	21 32810 16405	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

P.PrtY	r/w	base	19233152	Enum	Enum_Parity	Description
		1dP	16576			Parity of data on the panel interface. Simple possibility of checking that transferred data is correct.
					0	No parity, with 2 stop bits.
					1	even parity
					2	odd parity
					3	no parity (1 stop bit)

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	2232812 16406	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

P.CdEL	r/w	base 1dP	194 33156 16578	Int	0...200	<input type="checkbox"/> For panel interface. Additional acceptable delay time between 2 received bytes, before "end of message" is assumed. This time is needed if data is not transmitted continuously by the modem.
--------	-----	-------------	--------------------	-----	---------	---

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	23 32814 16407	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection +

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

P.dELY	r/w	base 1dP	19333154 16577	Int	0...200	<input type="checkbox"/>	Response delay [ms] for panel interface. Additional delay time before the received message may be answered on the Modbus. (Might be necessary, if the same line is used for transmit/receive.)
--------	-----	-------------	-------------------	-----	---------	--------------------------	--



## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	24 32816 16408	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	2532818 16409	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	26 32820 16410	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	27 32822 16411	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O



## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	28 32824 16412	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	29 32826 16413	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	30 32828 16414	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	31 16415	32830	Enum	<i>ENUM_IntMastMod</i> Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O



## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	3232832 16416	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	33 32834 16417	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

**12** othr• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
42					VARIO UTH 4 - DO 8	Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
50					remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs	
60					VARIO RM TX	branch module for connecting remote I/O
61					VARIO RM BK	bus coupler module for connecting remote I/O

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
I.MasMod	r/w	base 1dP	34 32836 16418	Enum	ENUM_IntMastMod	Selection of the device on the internal bus (assignment of which module is plugged into this bus socket, e.g. input module with 4 digital inputs. The modules must be in an uninterrupted sequence, and the assignment must correspond to the actual socket.
					0	No further module on internal bus
					1	VARIO DI 2/24 Vario digital input module, 2 digital inputs, 24 V DC, 4-wire connection
					2	VARIO DI 4/24 Vario digital input module, 4 digital inputs, 24 V DC, 3-wire connection
					3	VARIO DI 8/24 Vario digital input module, 8 digital inputs, 24 V DC, 4-wire connection
					4	VARIO DI 16/24 Vario digital input module, 16 digital inputs, 24 V DC, 3-wire connection
					10	VARIO DO 2/24 Vario digital output module, 2 digital outputs, 24 V DC, 500 mA, 4-wire connection
					11	VARIO DO 4/24 Vario digital output module, 4 digital outputs, 24 V DC, 500 mA, 3-wire connection
					12	VARIO DO 8/24 Vario digital output module, 8 digital outputs, 24 V DC, 500 mA, 4-wire connection
					13	VARIO DO 16/24 Vario digital output module, 16 digital outputs, 24 V DC, 500 mA, 3-wire connection
					14	VARIO DO 1/230 Vario relay output module, 1 relay output, gold plated change-over contact, 5...253 V AC, 3 A
					15	VARIO DO 4/230 Vario relay output module, 4 relay outputs, gold plated change-over contact, 5...253 V AC, 3 A
					20	VARIO AI 2/SF Vario analog input module, 2 analog inputs (current / voltage), 2-wire connection
					21	VARIO AI 8/SF Vario analog input module, 8 analog inputs (current / voltage), 2-wire connection
					22	VARIO UTH 2 Vario analog input module, 2 analog inputs (thermocouples), 2-wire connection
					23	VARIO RTD 2 Vario analog input module, 2 analog inputs (resistive sensors), 2-, 3-, 4-wire connection
					30	VARIO AO 1/SF Vario analog output module, 1 analog output (current / voltage), 2-wire connection
					31	VARIO AO 2/U/BP Vario analog output module, 2 analog outputs (voltage), 2-wire connection
					40	VARIO RTD 6 - DO 6 Vario I/O module, 6 inputs for resistance thermometers, 3-wire connection + screen, 6 outputs 24 V DC, 1 heating current sum input
					41	VARIO UTH 8 - DO 8 Vario I/O module, 8 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
					42	VARIO UTH 4 - DO 8 Vario I/O module, 4 inputs for thermocouples, 2-wire connection + screen, 8 outputs 24 V DC, 1 heating current sum input
					50	remote I/O module, custom made, with 8 digital 230V inputs and 8 relay outputs
					60	VARIO RM TX branch module for connecting remote I/O
					61	VARIO RM BK bus coupler module for connecting remote I/O

RInd0	r/w	base 1dP	151435796 17898	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 0 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd1	r/w	base 1dP	151535798 17899	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 1 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd2	r/w	base 1dP	151635800 17900	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 2 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd3	r/w	base 1dP	151735802 17901	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 3 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd4	r/w	base 1dP	151835804 17902	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 4 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd5	r/w	base 1dP	151935806 17903	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 5 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd6	r/w	base 1dP	152035808 17904	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 6 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

RInd7	r/w	base 1dP	152135810 17905	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be output for Index 7 when reading.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

WInd0	r/w	base 1dP	152235812 17906	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 0 when writing.
-------	-----	-------------	--------------------	-----	-----------	---

Step 0 To 29 By 512 1024

## 12 othr

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
WInd1	r/w	base 1523 1dP 17907	35814	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 1 when writing.
Step 0 To 29 By 512 1024						
WInd2	r/w	base 1524 1dP 17908	35816	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 2 when writing.
Step 0 To 29 By 512 1024						
WInd3	r/w	base 1525 1dP 17909	35818	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 3 when writing.
Step 0 To 29 By 512 1024						
WInd4	r/w	base 1526 1dP 17910	35820	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 4 when writing.
Step 0 To 29 By 512 1024						
WInd5	r/w	base 1527 1dP 17911	35822	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 5 when writing.
Step 0 To 29 By 512 1024						
WInd6	r/w	base 1528 1dP 17912	35824	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 6 when writing.
Step 0 To 29 By 512 1024						
WInd7	r/w	base 1529 1dP 17913	35826	Int	0...16384	<input type="checkbox"/> Definition of the datum that is to be read for Index 7 when writing.
Step 0 To 29 By 512 1024						
U.StE	r/w	base 11 1dP 16395	32790	Enum	<i>ENUM_USTATERR</i>	Activates the StatErr function. The StatErr function transfers module fault messages to an InterBus master, e.g. sensor fault and Loop alarm.
					0	Do not activate 'StatErr' of the Interbus, i.e. do not signal a module fault to the Interbus master.
					1	Activate 'StatErr' of the Interbus, if the device signals 'Fail'. Module faults are signalled to the Interbus master.

## 12 othr

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
Gef.Del	r/w	base 1dP	35033468 16734	Float	0...3000	<input type="checkbox"/> With 'guided setpoint changes', this delta is added to or subtracted from the lowest process value. Channels already at the setpoint (target setpoint ± delta), or with Fail or OFF are given the target setpoint directly. The function 'guided setpoint change' permits several zones to be guided to a new (target) setpoint with minimum deviations between the process values, e.g. to prevent thermal stresses.
Hc.Tol	r/w	base 1dP	7432916 16458	Int	0...50	<input type="checkbox"/> The heat current limit Hc.Lim results in the calculation of the actual measured heating current and the heating tolerance. If overload+short circuit is selected the tolerance is added to the measured value, in case of break + short circuit the tolerance is subtracted.

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
DIMod1	r	base 1dP	40033568 16784	Int	0...0	<input type="checkbox"/> If the module no. 1 has digital input, the status of the input can be read here.
DIMod10	r	base 1dP	40933586 16793	Int	0...0	<input type="checkbox"/> If the module no. 10 has digital inputs, the status of the inputs can be read here.
DIMod11	r	base 1dP	41033588 16794	Int	0...0	<input type="checkbox"/> If the module no. 11 has digital inputs, the status of the inputs can be read here.
DIMod12	r	base 1dP	41133590 16795	Int	0...0	<input type="checkbox"/> If the module no. 12 has digital inputs, the status of the inputs can be read here.
DIMod13	r	base 1dP	41233592 16796	Int	0...0	<input type="checkbox"/> If the module no. 13 has digital inputs, the status of the inputs can be read here.
DIMod14	r	base 1dP	41333594 16797	Int	0...0	<input type="checkbox"/> If the module no. 14 has digital inputs, the status of the inputs can be read here.
DIMod15	r	base 1dP	41433596 16798	Int	0...0	<input type="checkbox"/> If the module no. 15 has digital inputs, the status of the inputs can be read here.
DIMod16	r	base 1dP	41533598 16799	Int	0...0	<input type="checkbox"/> If the module no. 16 has digital inputs, the status of the inputs can be read here.
DIMod17	r	base 1dP	41633600 16800	Int	0...0	<input type="checkbox"/> If the module no. 17 has digital inputs, the status of the inputs can be read here.



**12** othr• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
DIMod18	r	base 1dP 16801	418 33602	Int	0...0	<input type="checkbox"/> If the module no. 18 has digital inputs, the status of the inputs can be read here.
DIMod19	r	base 1dP 16802	419 33604	Int	0...0	<input type="checkbox"/> If the module no. 19 has digital inputs, the status of the inputs can be read here.
DIMod2	r	base 1dP 16785	401 33570	Int	0...0	<input type="checkbox"/> If the module no. 2 has digital inputs, the status of the inputs can be read here.
DIMod20	r	base 1dP 16803	419 33606	Int	0...0	<input type="checkbox"/> If the module no. 20 has digital inputs, the status of the inputs can be read here.
DIMod3	r	base 1dP 16786	402 33572	Int	0...0	<input type="checkbox"/> If the module no. 3 has digital inputs, the status of the inputs can be read here.
DIMod4	r	base 1dP 16787	403 33574	Int	0...0	<input type="checkbox"/> If the module no. 4 has digital inputs, the status of the inputs can be read here.
DIMod5	r	base 1dP 16788	404 33576	Int	0...0	<input type="checkbox"/> If the module no.5 has digital inputs, the status of the inputs can be read here.
DIMod6	r	base 1dP 16789	405 33578	Int	0...0	<input type="checkbox"/> If the module no. 6 has digital inputs, the status of the inputs can be read here.
DIMod7	r	base 1dP 16790	406 33580	Int	0...0	<input type="checkbox"/> If the module no. 7 has digital inputs, the status of the inputs can be read here.
DIMod8	r	base 1dP 16791	407 33582	Int	0...0	<input type="checkbox"/> If the module no. 8 has digital inputs, the status of the inputs can be read here.
DIMod9	r	base 1dP 16792	408 33584	Int	0...0	<input type="checkbox"/> If the module no. 8 has digital inputs, the status of the inputs can be read here.
DOMod1	r/w	base 1dP 16804	420 33608	Int	0...65535	<input type="checkbox"/> If the module no. 1 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod10	r/w	base 1dP 16813	429 33626	Int	0...65535	<input type="checkbox"/> If the module no. 10 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.

**12** othr• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
DOMod11	r/w	base 1dP	43033628 16814	Int	0...65535	<input type="checkbox"/> If the module no. 11 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod12	r/w	base 1dP	43133630 16815	Int	0...65535	<input type="checkbox"/> If the module no. 12 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod13	r/w	base 1dP	43233632 16816	Int	0...65535	<input type="checkbox"/> If the module no. 13 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod14	r/w	base 1dP	43333634 16817	Int	0...65535	<input type="checkbox"/> If the module no. 14 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod15	r/w	base 1dP	43433636 16818	Int	0...65535	<input type="checkbox"/> If the module no. 15 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod16	r/w	base 1dP	43533638 16819	Int	0...65535	<input type="checkbox"/> If the module no. 16 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod17	r/w	base 1dP	43633640 16820	Int	0...65535	<input type="checkbox"/> If the module no. 17 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod18	r/w	base 1dP	43733642 16821	Int	0...65535	<input type="checkbox"/> If the module no. 18 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod19	r/w	base 1dP	43833644 16822	Int	0...65535	<input type="checkbox"/> If the module no. 19 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod2	r/w	base 1dP	42133610 16805	Int	0...65535	<input type="checkbox"/> If the module no. 2 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.

## 12 othr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
DOMod20	r/w	base 1dP 439 33646 16823		Int	0...65535	<input type="checkbox"/> If the module no. 20 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod3	r/w	base 1dP 422 33612 16806		Int	0...65535	<input type="checkbox"/> If the module no. 3 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod4	r/w	base 1dP 423 33614 16807		Int	0...65535	<input type="checkbox"/> If the module no. 4 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod5	r/w	base 1dP 424 33616 16808		Int	0...65535	<input type="checkbox"/> If the module no. 5 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod6	r/w	base 1dP 425 33618 16809		Int	0...65535	<input type="checkbox"/> If the module no. 6 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod7	r/w	base 1dP 426 33620 16810		Int	0...65535	<input type="checkbox"/> If the module no. 7 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod8	r/w	base 1dP 427 33622 16811		Int	0...65535	<input type="checkbox"/> If the module no. 8 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
DOMod9	r/w	base 1dP 428 33624 16812		Int	0...65535	<input type="checkbox"/> If the module no. 9 has digital outputs, the unused outputs can be set here. The outputs used in the engineering are not changed while writing. During the reading of these data the current condition of the digital outputs is indicated.
E.2	r/w	base 1dP 77 32922 16461		Int	0...2	<input type="checkbox"/> Err 2 (internal error, resettable) (As a process value via fieldbus interface not writable!)
Gef.Sig	r/w	base 1dP 355 33478 16739		Enum	<i>Enum_Gef_Sig</i>	The signal "guidance active", starts the guided setpoint change, and indicates it. The function 'guided setpoint change' permits several zones to be guided to a new (target) setpoint with minimum deviations between the process values, e.g. to prevent thermal stresses.

0 The setpoints are not guided.

1 Guided setpoint increase (with temperatures: Heating).

2 Guided setpoint reduction (with temperatures: Cooling).

## 12 othr

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Hc.Trigge	r/w	base 1dP	7532918 16459	Enum	ENUM_Hc_Trigge r	Trigger of heat current limit Hc.Lim which is calculated from the actual measured heating current Hc.Value and the heating tolerance Hc.Tol. If overload+short circuit is selected the tolerance is added to the measured value, in case of break+short circuit the tolerance is subtracted.

0

1 Calculate the heat current limit Hc.Lim

IBusErr	r	base 1dP	7932926 16463	Int	0...65535	<input type="checkbox"/> Nature of the fault on the internal bus.
ProfErr	r	base 1dP	7832924 16462	Int	0...65535	<input type="checkbox"/> Nature of the fault on the PROFIBUS.

Bit 0 - Dp 1 No access to bus  
 Bit 1 - Dp 2 Configuration error  
 Bit 2 - Dp 3 Parameter fault  
 Bit 3 - Dp 4 No exchange of user data  
 Bit 4 - Communication with the bus coupler failed  
 Bit 5 - Fail-safe

SumErr	r	base 1dP	7632920 16460	Int	0...65535	<input type="checkbox"/> Summary of various faults.
--------	---	-------------	------------------	-----	-----------	---

Bit 0 - (internal fault, not resettable) return the controller to your supplier  
 Bit 1 - (internal fault, resettable)  
 Bit 2 - Configuration error in the device  
 Bit 3 - Fault on the internal bus  
 Bit 4 - Communication with the bus coupler failed  
 Bit 5 - Fault on the Profibus

**13 Out1**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
OutMod	r/w	base 1dP	1324 17708	35416	Enum	<i>Enum_Modul</i> Module to which the output can be connected.
Step 0 To 29 By 512 1024						
					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

## 13 Out1

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
OutInd	r/w	base 1dP	132535418 17709	Enum	<i>Enum_AusKanal</i>	Output (hardware) to the module (index) with which the output is to be connected.
Step 0 To 29 By 512 1024						0 Not active
					1 output 1	
					2 output 2	
					3 output 3	
					4 output 4	
					5 output 5	
					6 output 6	
					7 output 7	
					8 output 8	
					9 output 9	
					10 output 10	
					11 output 11	
					12 output 12	
					13 output 13	
					14 output 14	
					15 output 15	
					16 output 16	

SignSrc	r/w	base 1dP	132635420 17710	Enum	<i>Enum_Out</i>	Signal source of the output. An output can issue different source signals. This source signal is defined uniquely by the signal type (SignalSrc) and the channel (ZoneSrc).
Step 0 To 29 By 512 1024						0 Not active
					1 The controller output Y1, e.g. heating, switches this output.	
					2 The controller output Y2, e.g. cooling, switches this output.	
					3 Limit value Lim1 switches this output.	
					4 Limit value Lim2 switches this output.	
					5 Limit value Lim3 switches this output.	
					6 The loop monitoring alarm switches this output.	
					7 The common alarm LimGr1 switches this output.	
					8 Common alarm LimGr2 switches this output.	
					9 Common alarm LimGr3 switches this output.	
					10 The common alarm LimGr4 switches this output.	
					11 The common alarm LimGr5 switches this output.	
					12 The common alarm LimGr6 switches this output.	
					13 Forcing is active. The output is operated by the external PLC.	
					15 controller output y1 (continuous)	
					16 controller output y2 (continuous)	
					17 controller output yPid	
					18 process value	
					19 effective set-point Weff	
					20 control deviation xw (process value - set-point)	
					21 Forcing is active. The value for this output is provided by the external PLC.	

**13 Out1**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
ChnSrc	r/w	base 1dP	1327 17711	35422	Enum	<i>Enum_Zone</i> Definition of the channel whose signal is to be used.
Step 0 To 29 By 512 1024					0	not activ
					1	Signal comes from channel 1.
					2	Signal comes from channel 2.
					3	Signal comes from channel 3.
					4	Signal comes from channel 4.
					5	Signal comes from channel 5.
					6	Signal comes from channel 6.
					7	Signal comes from channel 7.
					8	Signal comes from channel 8.
					9	Signal comes from channel 9.
					10	Signal comes from channel 10.
					11	Signal comes from channel 11.
					12	Signal comes from channel 12.
					13	Signal comes from channel 13.
					14	Signal comes from channel 14.
					15	Signal comes from channel 15.
					16	Signal comes from channel 16.
					17	Signal comes from channel 17.
					18	Signal comes from channel 18.
					19	Signal comes from channel 19.
					20	Signal comes from channel 20.
					21	Signal comes from channel 21.
					22	Signal comes from channel 22.
					23	Signal comes from channel 23.
					24	Signal comes from channel 24.
					25	Signal comes from channel 25.
					26	Signal comes from channel 26.
					27	Signal comes from channel 27.
					28	Signal comes from channel 28.
					29	Signal comes from channel 29.
					30	Signal comes from channel 30.

O.Type	r/w	base 1dP	1328 17712	35424	Enum	<i>Enum_OtYP_I</i> The signal type indicates which signal is to be generated as output value, e.g. current or voltage output.
Step 0 To 29 By 512 1024					1	0 ... 20 mA continuous (only visible with current/logic/voltage).
					2	4 ... 20 mA continuous (only visible with current/logic/voltage).
					10	0...10 V continuous (only visible with current/logic/voltage)
					11	2...10 V continuous (only visible with current/logic/voltage)
					12	-10...10 V continuous (only visible with current/logic/voltage)

O.Act	r/w	base 1dP	1329 17713	35426	Enum	<i>Enum_OAct</i> Operating sense of the switching output. Direct: Active function (e.g. limit value) switches the output ON; Inverse: Active function (e.g. limit value) switches the output OFF.
Step 0 To 29 By 512 1024					0	direct / normally open
					1	inverse / normally closed

## 13 Out1

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
Hc.ALMod	r/w	base 1dP	133135430 17715	Enum	Enum_HcAlMode	Heating current alarm message. Depending on configuration, and apart from short-circuit monitoring, an overload test checks whether the heating current is above the adjusted current limit, or below the limit when the heating is switched off.
Step 0 To 29 By 512 1024						0 Activation of overload and short circuit monitoring. Overload = current I > heat current limit. 1 Activation of break and short circuit monitoring. Break = current I < heat current limit.

Tr.Rat	r/w	base 1dP	133235432 17716	Int	1...30000	<input type="checkbox"/> Conversion ratio of the current transformer. For example, a load current 5A = 5000 mA for a measurement current of 10 mA has a ratio of 500.
Step 0 To 29 By 512 1024						

Phase1	r/w	base 1dP	133335434 17717	Enum	ENUM_PHASE	Outer conductor used for correcting the heating current (L1, L2, L3).
Step 0 To 29 By 512 1024						0 not active 1 Phase conductor 1 is used for correcting the heating current. 2 Phase conductor 2 is used for correcting the heating current. 3 Phase conductor 3 is used for correcting the heating current.

Out0	r/w	base 1dP	133435436 17718	Float	-3000...3200	<input type="checkbox"/> Lower scaling limit of the analog output (corresponds to 0%). If current and voltage signals are used as output values, the display can be scaled to the output value in the Parameter Level. The output value of the lower scaling point is indicated in the respective electrical unit (mA / V).
Step 0 To 29 By 512 1024						

Out100	r/w	base 1dP	133535438 17719	Float	-3000...3200	<input type="checkbox"/> Upper scaling limit of the analog output (corresponds to 100%). If current or voltage signals are used as output values, scaling of the display can be applied to the output value by means of the Parameter Level. Definition of the upper output limit is done using the corresponding electrical value (mA / V).
Step 0 To 29 By 512 1024						

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
Hc.Lim3	r/w	base 1dP	134035448 17724	Float	1,5...50	<input checked="" type="checkbox"/> Limit value of heating current monitor [A]. Depending on configuration, and apart from short-circuit monitoring, an overload test checks whether the heating current is above the adjusted current limit, or below the limit when the heating is switched off. The heating current is measured by means of a current transformer (accessory), and the current range can be adapted.
Step 0 To 29 By 512 1024						



**13 Out1**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
DigOut3	r	base 1dP	1344 35456 17728	Enum	<i>Enum_Ausgang</i>	Signal at digital output
Step 0 To 29 By 512 1024					0	off
					1	on
AnaOut3	r	base 1dP	1345 35458 17729	Float	0...1	<input type="checkbox"/> Present digital value of the analog output signal (ahead of the D/A converter)
Step 0 To 29 By 512 1024						
DigForc3	r/w	base 1dP	1346 35460 17730	Enum	<i>Enum_Ausgang</i>	Forcing value of the digital output. Forcing involves the external operation of an output, i.e. the instrument has influence on this output. (Used for the operation of free outputs e.g. by a supervisory PLC.)
Step 0 To 29 By 512 1024					0	off
					1	on
F.Out3	r/w	base 1dP	1347 35462 17731	Float	-1999...3200	<input type="checkbox"/> Forcing value of the analog output. Forcing involves the external operation of an output, i.e. the instrument has influence on this output. (Used for the operation of free outputs e.g. by a supervisory PLC.)
Step 0 To 29 By 512 1024						
Hc.Status	r	base 1dP	1348 35464 17732	Enum	<i>Enum_HCStatus</i>	Status of the heating current alarm. Displayable are heating current short-circuit and/or heating current alarm. Depending on configuration, the heating current alarm is either an interruption of heating current ( $I < \text{limit value}$ ) or heating current overload ( $I > \text{limit value}$ ).
Step 0 To 29 By 512 1024					0	not active
					1	Heating current limit has been exceeded.
					2	An SSR short-circuit has occurred.
					3	The heating current limit has been exceeded, and there is an SSR short-circuit.
Hc.Value3	r	base 1dP	1349 35466 17733	Float	-3200...3200	<input type="checkbox"/> Depending on configuration, and apart from short-circuit monitoring, an overload test checks whether the heating current is above the adjusted current limit, or below the limit when the heating is switched off. Input scaling can be adapted.
Step 0 To 29 By 512 1024						

## 14 Out2

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
OutMod	r/w	base 1dP	135435476 17738	Enum	<i>Enum_Modul</i>	Module to which the output can be connected.
Step 0 To 29 By 512 1024					0	Not active
					1	device
					2	module 1
					3	module 2
					4	module 3
					5	module 4
					6	module 5
					7	module 6
					8	module 7
					9	module 8
					10	module 9
					11	module 10
					12	module 11
					13	module 12
					14	module 13
					15	module 14
					16	module 15
					17	module 16
					18	module 17
					19	module 18
					20	module 19
					21	module 20

OutInd	r/w	base	real	Typ	Value/off	Description
		base 1dP	135535478 17739	Enum	<i>Enum_AusKanal</i>	Output (hardware) to the module (index) with which the output is to be connected.
Step 0 To 29 By 512 1024					0	Not active
					1	output 1
					2	output 2
					3	output 3
					4	output 4
					5	output 5
					6	output 6
					7	output 7
					8	output 8
					9	output 9
					10	output 10
					11	output 11
					12	output 12
					13	output 13
					14	output 14
					15	output 15
					16	output 16

**14 Out2**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
SignSrc	r/w	base 1dP	1356 17740	35480	Enum <i>Enum_Out</i>	Signal source of the output. An output can issue different source signals. This source signal is defined uniquely by the signal type (SignalSrc) and the channel (ZoneSrc).
Step 0 To 29		By	512	1024	0	Not active
					1	The controller output Y1, e.g. heating, switches this output.
					2	The controller output Y2, e.g. cooling, switches this output.
					3	Limit value Lim1 switches this output.
					4	Limit value Lim2 switches this output.
					5	Limit value Lim3 switches this output.
					6	The loop monitoring alarm switches this output.
					7	The common alarm LimGr1 switches this output.
					8	Common alarm LimGr2 switches this output.
					9	Common alarm LimGr3 switches this output.
					10	The common alarm LimGr4 switches this output.
					11	The common alarm LimGr5 switches this output.
					12	The common alarm LimGr6 switches this output.
					13	Forcing is active. The output is operated by the external PLC.
					15	controller output y1 (continuous)
					16	controller output y2 (continuous)
					17	controller output yPid
					18	process value
					19	effective set-point Weff
					20	control deviation xw (process value - set-point)
					21	Forcing is active. The value for this output is provided by the external PLC.

## 14 Out2

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
ChnSrc	r/w	base 1dP	135735482 17741	Enum	Enum_Zone	Definition of the channel whose signal is to be used.
Step 0 To 29 By 512 1024					0	not activ
					1	Signal comes from channel 1.
					2	Signal comes from channel 2.
					3	Signal comes from channel 3.
					4	Signal comes from channel 4.
					5	Signal comes from channel 5.
					6	Signal comes from channel 6.
					7	Signal comes from channel 7.
					8	Signal comes from channel 8.
					9	Signal comes from channel 9.
					10	Signal comes from channel 10.
					11	Signal comes from channel 11.
					12	Signal comes from channel 12.
					13	Signal comes from channel 13.
					14	Signal comes from channel 14.
					15	Signal comes from channel 15.
					16	Signal comes from channel 16.
					17	Signal comes from channel 17.
					18	Signal comes from channel 18.
					19	Signal comes from channel 19.
					20	Signal comes from channel 20.
					21	Signal comes from channel 21.
					22	Signal comes from channel 22.
					23	Signal comes from channel 23.
					24	Signal comes from channel 24.
					25	Signal comes from channel 25.
					26	Signal comes from channel 26.
					27	Signal comes from channel 27.
					28	Signal comes from channel 28.
					29	Signal comes from channel 29.
					30	Signal comes from channel 30.

O.Type	r/w	base 1dP	135835484 17742	Enum	Enum_OtYP_I	The signal type indicates which signal is to be generated as output value, e.g. current or voltage output.
Step 0 To 29 By 512 1024					1	0 ... 20 mA continuous (only visible with current/logic/voltage).
					2	4 ... 20 mA continuous (only visible with current/logic/voltage).
					10	0...10 V continuous (only visible with current/logic/voltage)
					11	2...10 V continuous (only visible with current/logic/voltage)
					12	-10...10 V continuous (only visible with current/logic/voltage)

O.Act	r/w	base 1dP	135935486 17743	Enum	Enum_OAct	Operating sense of the switching output. Direct: Active function (e.g. limit value) switches the output ON; Inverse: Active function (e.g. limit value) switches the output OFF.
Step 0 To 29 By 512 1024					0	direct / normally open
					1	inverse / normally closed

## 14 Out2

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description	
Hc.ALMod	r/w	base 1dP	1361 17745	35490	Enum	<i>Enum_HcAlMode</i>	Heating current alarm message. Depending on configuration, and apart from short-circuit monitoring, an overload test checks whether the heating current is above the adjusted current limit, or below the limit when the heating is switched off.
Step 0 To 29 By 512 1024						0	Activation of overload and short circuit monitoring. Overload = current I > heat current limit.
						1	Activation of break and short circuit monitoring. Break = current I < heat current limit.

Tr.Rat	r/w	base 1dP	1362 17746	35492	Int	1...30000	<input type="checkbox"/>	Conversion ratio of the current transformer. For example, a load current 5A = 5000 mA for a measurement current of 10 mA has a ratio of 500.
--------	-----	-------------	---------------	-------	-----	-----------	--------------------------	--

Step 0 To 29 By 512 1024

Phase1	r/w	base 1dP	1363 17747	35494	Enum	<i>ENUM_PHASE</i>		Outer conductor used for correcting the heating current (L1, L2, L3).
Step 0 To 29 By 512 1024						0	not active	
						1	Phase conductor 1 is used for correcting the heating current.	
						2	Phase conductor 2 is used for correcting the heating current.	
						3	Phase conductor 3 is used for correcting the heating current.	

Out0	r/w	base 1dP	1364 17748	35496	Float	-3200...3200	<input type="checkbox"/>	Lower scaling limit of the analog output (corresponds to 0%). If current and voltage signals are used as output values, the display can be scaled to the output value in the Parameter Level. The output value of the lower scaling point is indicated in the respective electrical unit (mA / V).
------	-----	-------------	---------------	-------	-------	--------------	--------------------------	--

Step 0 To 29 By 512 1024

Out100	r/w	base 1dP	1365 17749	35498	Float	-3200...3200	<input type="checkbox"/>	Upper scaling limit of the analog output (corresponds to 100%). If current or voltage signals are used as output values, scaling of the display can be applied to the output value by means of the Parameter Level. Definition of the upper output limit is done using the corresponding electrical value (mA / V).
--------	-----	-------------	---------------	-------	-------	--------------	--------------------------	---

Step 0 To 29 By 512 1024

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description		
Hc.Lim3	r/w	base 1dP	1370 17754	35508	Float	1,5...50	<input checked="" type="checkbox"/>	Limit value of heating current monitor [A]. Depending on configuration, and apart from short-circuit monitoring, an overload test checks whether the heating current is above the adjusted current limit, or below the limit when the heating is switched off. The heating current is measured by means of a current transformer (accessory), and the current range can be adapted.

Step 0 To 29 By 512 1024

## 14 Out2

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
DigOut3	r	base 1dP	137435516 17758	Enum	<i>Enum_Ausgang</i>	Signal at digital output
Step 0 To 29 By 512 1024					0	off
					1	on
AnaOut3	r	base 1dP	137535518 17759	Float	-3200...3200	<input type="checkbox"/> Present digital value of the analog output signal (ahead of the D/A converter)
Step 0 To 29 By 512 1024						
DigForc3	r/w	base 1dP	137635520 17760	Enum	<i>Enum_Ausgang</i>	Forcing value of the digital output. Forcing involves the external operation of an output, i.e. the instrument has influence on this output. (Used for the operation of free outputs e.g. by a supervisory PLC.)
Step 0 To 29 By 512 1024					0	off
					1	on
F.Out3	r/w	base 1dP	137735522 17761	Float	-3200...3200	<input type="checkbox"/> Forcing value of the analog output. Forcing involves the external operation of an output, i.e. the instrument has influence on this output. (Used for the operation of free outputs e.g. by a supervisory PLC.)
Step 0 To 29 By 512 1024						
Hc.Status	r	base 1dP	137835524 17762	Enum	<i>Enum_HCStatus</i>	Status of the heating current alarm. Displayable are heating current short-circuit and/or heating current alarm. Depending on configuration, the heating current alarm is either an interruption of heating current ( $I < \text{limit value}$ ) or heating current overload ( $I > \text{limit value}$ ).
Step 0 To 29 By 512 1024					0	not active
					1	Heating current limit has been exceeded.
					2	An SSR short-circuit has occurred.
					3	The heating current limit has been exceeded, and there is an SSR short-circuit.
Hc.Value3	r	base 1dP	137935526 17763	Float	-3200...3200	<input type="checkbox"/> Depending on configuration, and apart from short-circuit monitoring, an overload test checks whether the heating current is above the adjusted current limit, or below the limit when the heating is switched off. Input scaling can be adapted.
Step 0 To 29 By 512 1024						

## 15 PAr2

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
Pb12	r/w	base 1dP	1204 35176 17588	Float	0,1...3200	<input type="checkbox"/> Proportional band 1 (heating) in engineering unit (e.g. °C) of the 2nd parameter set. The Pb defines the ratio between output value and control deviation. The smaller the value of Pb is, the stronger is the control response for a specific control deviation. Too large and too small values for Pb lead to process oscillations (hunting).
Step 0 To 29 By 512 1024						
Pb22	r/w	base 1dP	1205 35178 17589	Float	0,1...3200	<input type="checkbox"/> Proportional band 2 (cooling) in engineering unit (e.g. °C) of the 2nd parameter set. The Pb defines the ratio between output value and control deviation. The smaller the value of Pb is, the stronger is the control response for a specific control deviation. Too large and too small values for Pb lead to process oscillations (hunting).
Step 0 To 29 By 512 1024						
ti12	r/w	base 1dP	1206 35180 17590	Float	1...3200	<input checked="" type="checkbox"/> Integral action time 1 (heating) [s]. Second parameter set. Ti is the time constant of the integral portion. The smaller Ti is, the faster is the response of the integral action. Ti too small: Control tends to oscillate. Ti too large: Control is sluggish and needs a long time to line out.
Step 0 To 29 By 512 1024						
ti22	r/w	base 1dP	1207 35182 17591	Float	1...3200	<input checked="" type="checkbox"/> Integral action time 2 (cooling) [s]. Second parameter set. Ti is the time constant of the integral portion. The smaller Ti is, the faster is the response of the integral action. Ti too small: Control tends to oscillate. Ti too large: Control is sluggish and needs a long time to line out.
Step 0 To 29 By 512 1024						
td12	r/w	base 1dP	1208 35184 17592	Float	1...3200	<input checked="" type="checkbox"/> Derivative action time 1 (heating) [s], second parameter set. Td is the time constant of the derivative portion. The faster the process value changes, and the larger the value of Td is, the stronger will be the derivative action. Td too small: Very little derivative action. Td too large: Control tends to oscillate.
Step 0 To 29 By 512 1024						
td22	r/w	base 1dP	1209 35186 17593	Float	1...3200	<input checked="" type="checkbox"/> Derivative action time 2 (cooling) [s], second parameter set. Td is the time constant of the derivative portion. The faster the process value changes, and the larger the value of Td is, the stronger will be the derivative action. Td too small: Very little derivative action. Td too large: Control tends to oscillate.
Step 0 To 29 By 512 1024						

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi1	r/w	base 1dP	140435576 17788	Enum	<i>Enum_Inp_SamAla</i>	Signal source 1: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 1), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi1	r/w	base 1dP	140535578 17789	Int	0...30 <input type="checkbox"/>	Signal source 1: Channel. Generation of a common alarm from many individual signal sources (here signal source 1), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						
SrcSi2	r/w	base 1dP	140635580 17790	Enum	<i>Enum_Inp_SamAla</i>	Signal source 2: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 2), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi2	r/w	base 1dP	140735582 17791	Int	0...30 <input type="checkbox"/>	Signal source 2: Channel. Generation of a common alarm from many individual signal sources (here signal source 2), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						



**16 SamAlar**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi3	r/w	base 1dP	1408 17792	35584	Enum <i>Enum_Inp_SamA la</i>	Signal source 3: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 3), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.

ChnSi3	r/w	base 1dP	1409 17793	35586	Int	0...30 <input type="checkbox"/>	Signal source 3: Channel. Generation of a common alarm from many individual signal sources (here signal source 3), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
--------	-----	-------------	---------------	-------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

SrcSi4	r/w	base 1dP	1410 17794	35588	Enum <i>Enum_Inp_SamA la</i>	Signal source 4: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 4), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
--------	-----	-------------	---------------	-------	-------------------------------------	--

Step 0 To 5 By 512 1024

0	Not active
1	The input circuit alarm FAIL is displayed by the common alarm.
2	The limit value alarm Lim1 is displayed by the common alarm.
3	The limit value alarm Lim2 is displayed by the common alarm.
4	The limit value alarm Lim3 is displayed by the common alarm.
5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
6	The heating current alarm (HC alarm) is displayed by the common alarm.
7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi4	r/w	base 1dP	1411 17795	35590	Int	0...30 <input type="checkbox"/>	Signal source 4: Channel. Generation of a common alarm from many individual signal sources (here signal source 4), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
--------	-----	-------------	---------------	-------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi5	r/w	base 1dP	141235592 17796	Enum	<i>Enum_Inp_SamAla</i>	Signal source 5: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 5), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi5	r/w	base 1dP	141335594 17797	Int	0...30 <input type="checkbox"/>	Signal source 5: Channel. Generation of a common alarm from many individual signal sources (here signal source 5), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						
SrcSi6	r/w	base 1dP	141435596 17798	Enum	<i>Enum_Inp_SamAla</i>	Signal source 6: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 6), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi6	r/w	base 1dP	141535598 17799	Int	0...30 <input type="checkbox"/>	Signal source 6: Channel. Generation of a common alarm from many individual signal sources (here signal source 6), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi7	r/w	base 1dP	1416 17800	35600	Enum <i>Enum_Inp_SamA la</i>	Signal source 7: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 7), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.

ChnSi7	r/w	base 1dP	1417 17801	35602	Int	0...30 <input type="checkbox"/>	Signal source 7: Channel. Generation of a common alarm from many individual signal sources (here signal source 7), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
--------	-----	-------------	---------------	-------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

SrcSi8	r/w	base 1dP	1418 17802	35604	Enum <i>Enum_Inp_SamA la</i>	Signal source 8: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 8), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
--------	-----	-------------	---------------	-------	-------------------------------------	--

Step 0 To 5 By 512 1024

0	Not active
1	The input circuit alarm FAIL is displayed by the common alarm.
2	The limit value alarm Lim1 is displayed by the common alarm.
3	The limit value alarm Lim2 is displayed by the common alarm.
4	The limit value alarm Lim3 is displayed by the common alarm.
5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
6	The heating current alarm (HC alarm) is displayed by the common alarm.
7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi8	r/w	base 1dP	1419 17803	35606	Int	0...30 <input type="checkbox"/>	Signal source 8: Channel. Generation of a common alarm from many individual signal sources (here signal source 8), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
--------	-----	-------------	---------------	-------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi9	r/w	base 1dP	142035608 17804	Enum	<i>Enum_Inp_SamAla</i>	Signal source 9: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 9), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi9	r/w	base 1dP	142135610 17805	Int	0...30 <input type="checkbox"/>	Signal source 9: Channel. Generation of a common alarm from many individual signal sources (here signal source 9), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						
SrcSi10	r/w	base 1dP	142235612 17806	Enum	<i>Enum_Inp_SamAla</i>	Signal source 10: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 10), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi10	r/w	base 1dP	142335614 17807	Int	0...30 <input type="checkbox"/>	Signal source 10: Channel. Generation of a common alarm from many individual signal sources (here signal source 10), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						

**16 SamAlar**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description	
SrcSi11	r/w	base 1dP	1424 17808	35616	Enum	<i>Enum_Inp_SamAla</i>	Signal source 11: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 11), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024	
					0	Not active	
					1	The input circuit alarm FAIL is displayed by the common alarm.	
					2	The limit value alarm Lim1 is displayed by the common alarm.	
					3	The limit value alarm Lim2 is displayed by the common alarm.	
					4	The limit value alarm Lim3 is displayed by the common alarm.	
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.	
					6	The heating current alarm (HC alarm) is displayed by the common alarm.	
					7	The short-circuit alarm SSR is displayed by the common alarm.	

ChnSi11	r/w	base 1dP	1425 17809	35618	Int	0...30	<input type="checkbox"/>	Signal source 11: Channel. Generation of a common alarm from many individual signal sources (here signal source 11), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024		

SrcSi12	r/w	base 1dP	1426 17810	35620	Enum	<i>Enum_Inp_SamAla</i>		Signal source 12: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 12), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024		
					0	Not active		
					1	The input circuit alarm FAIL is displayed by the common alarm.		
					2	The limit value alarm Lim1 is displayed by the common alarm.		
					3	The limit value alarm Lim2 is displayed by the common alarm.		
					4	The limit value alarm Lim3 is displayed by the common alarm.		
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.		
					6	The heating current alarm (HC alarm) is displayed by the common alarm.		
					7	The short-circuit alarm SSR is displayed by the common alarm.		

ChnSi12	r/w	base 1dP	1427 17811	35622	Int	0...30	<input type="checkbox"/>	Signal source 12: Channel. Generation of a common alarm from many individual signal sources (here signal source 12), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024		

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi13	r/w	base 1dP	142835624 17812	Enum	<i>Enum_Inp_SamAla</i>	Signal source 13: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 13), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).

Step 0 To 5 By 512 1024

0	Not active
1	The input circuit alarm FAIL is displayed by the common alarm.
2	The limit value alarm Lim1 is displayed by the common alarm.
3	The limit value alarm Lim2 is displayed by the common alarm.
4	The limit value alarm Lim3 is displayed by the common alarm.
5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
6	The heating current alarm (HC alarm) is displayed by the common alarm.
7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi13	r/w	base 1dP	142935626 17813	Int	0...30 <input type="checkbox"/>	Signal source 13: Channel. Generation of a common alarm from many individual signal sources (here signal source 13), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
---------	-----	-------------	--------------------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

SrcSi14	r/w	base 1dP	143035628 17814	Enum	<i>Enum_Inp_SamAla</i>	Signal source 14: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 14), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
---------	-----	-------------	--------------------	------	------------------------	--

Step 0 To 5 By 512 1024

0	Not active
1	The input circuit alarm FAIL is displayed by the common alarm.
2	The limit value alarm Lim1 is displayed by the common alarm.
3	The limit value alarm Lim2 is displayed by the common alarm.
4	The limit value alarm Lim3 is displayed by the common alarm.
5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
6	The heating current alarm (HC alarm) is displayed by the common alarm.
7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi14	r/w	base 1dP	143135630 17815	Int	0...30 <input type="checkbox"/>	Signal source 14: Channel. Generation of a common alarm from many individual signal sources (here signal source 14), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
---------	-----	-------------	--------------------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

**16 SamAlar**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description	
SrcSi15	r/w	base 1dP	1432 17816	35632	Enum	<i>Enum_Inp_SamAla</i>	Signal source 15: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 15), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0	Not active
						1	The input circuit alarm FAIL is displayed by the common alarm.
						2	The limit value alarm Lim1 is displayed by the common alarm.
						3	The limit value alarm Lim2 is displayed by the common alarm.
						4	The limit value alarm Lim3 is displayed by the common alarm.
						5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6	The heating current alarm (HC alarm) is displayed by the common alarm.
						7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi15	r/w	base 1dP	1433 17817	35634	Int	0...30	<input type="checkbox"/>	Signal source 15: Channel. Generation of a common alarm from many individual signal sources (here signal source 15), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024								

SrcSi16	r/w	base 1dP	1434 17818	35636	Enum	<i>Enum_Inp_SamAla</i>		Signal source 16: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 16), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0	Not active	
						1	The input circuit alarm FAIL is displayed by the common alarm.	
						2	The limit value alarm Lim1 is displayed by the common alarm.	
						3	The limit value alarm Lim2 is displayed by the common alarm.	
						4	The limit value alarm Lim3 is displayed by the common alarm.	
						5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.	
						6	The heating current alarm (HC alarm) is displayed by the common alarm.	
						7	The short-circuit alarm SSR is displayed by the common alarm.	

ChnSi16	r/w	base 1dP	1435 17819	35638	Int	0...30	<input type="checkbox"/>	Signal source 16: Channel. Generation of a common alarm from many individual signal sources (here signal source 16), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024								



## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi17	r/w	base 1dP	143635640 17820	Enum	<i>Enum_Inp_SamA la</i>	Signal source 17: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 17), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024	0	Not active
					1	The input circuit alarm FAIL is displayed by the common alarm.
					2	The limit value alarm Lim1 is displayed by the common alarm.
					3	The limit value alarm Lim2 is displayed by the common alarm.
					4	The limit value alarm Lim3 is displayed by the common alarm.
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
					6	The heating current alarm (HC alarm) is displayed by the common alarm.
					7	The short-circuit alarm SSR is displayed by the common alarm.
ChnSi17	r/w	base 1dP	143735642 17821	Int	0...30 <input type="checkbox"/>	Signal source 17: Channel. Generation of a common alarm from many individual signal sources (here signal source 17), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024		
SrcSi18	r/w	base 1dP	143835644 17822	Enum	<i>Enum_Inp_SamA la</i>	Signal source 18: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 18), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024	0	Not active
					1	The input circuit alarm FAIL is displayed by the common alarm.
					2	The limit value alarm Lim1 is displayed by the common alarm.
					3	The limit value alarm Lim2 is displayed by the common alarm.
					4	The limit value alarm Lim3 is displayed by the common alarm.
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
					6	The heating current alarm (HC alarm) is displayed by the common alarm.
					7	The short-circuit alarm SSR is displayed by the common alarm.
ChnSi18	r/w	base 1dP	143935646 17823	Int	0...30 <input type="checkbox"/>	Signal source 18: Channel. Generation of a common alarm from many individual signal sources (here signal source 18), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024		



**16 SamAlar**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description	
SrcSi19	r/w	base 1dP	1440 17824	35648	Enum	<i>Enum_Inp_SamAla</i>	Signal source 19: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 19), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0	Not active
						1	The input circuit alarm FAIL is displayed by the common alarm.
						2	The limit value alarm Lim1 is displayed by the common alarm.
						3	The limit value alarm Lim2 is displayed by the common alarm.
						4	The limit value alarm Lim3 is displayed by the common alarm.
						5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6	The heating current alarm (HC alarm) is displayed by the common alarm.
						7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi19	r/w	base 1dP	1441 17825	35650	Int	0...30	<input type="checkbox"/>	Signal source 19: Channel. Generation of a common alarm from many individual signal sources (here signal source 19), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024								

SrcSi20	r/w	base 1dP	1442 17826	35652	Enum	<i>Enum_Inp_SamAla</i>		Signal source 20: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 20), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0	Not active	
						1	The input circuit alarm FAIL is displayed by the common alarm.	
						2	The limit value alarm Lim1 is displayed by the common alarm.	
						3	The limit value alarm Lim2 is displayed by the common alarm.	
						4	The limit value alarm Lim3 is displayed by the common alarm.	
						5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.	
						6	The heating current alarm (HC alarm) is displayed by the common alarm.	
						7	The short-circuit alarm SSR is displayed by the common alarm.	

ChnSi20	r/w	base 1dP	1443 17827	35654	Int	0...30	<input type="checkbox"/>	Signal source 20: Channel. Generation of a common alarm from many individual signal sources (here signal source 2), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024								

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi21	r/w	base 1dP	144435656 17828	Enum	<i>Enum_Inp_SamA la</i>	Signal source 21: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 21), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi21	r/w	base 1dP	144535658 17829	Int	0...30 <input type="checkbox"/>	Signal source 21: Channel. Generation of a common alarm from many individual signal sources (here signal source 21), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						
SrcSi22	r/w	base 1dP	144635660 17830	Enum	<i>Enum_Inp_SamA la</i>	Signal source 22: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 22), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi22	r/w	base 1dP	144735662 17831	Int	0...30 <input type="checkbox"/>	Signal source 22: Channel. Generation of a common alarm from many individual signal sources (here signal source 22), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi23	r/w	base 1dP	1448 17832	35664	Enum <i>Enum_Inp_SamAla</i>	Signal source 23: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 23), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.

ChnSi23	r/w	base 1dP	1449 17833	35666	Int	0...30 <input type="checkbox"/>	Signal source 23: Channel. Generation of a common alarm from many individual signal sources (here signal source 23), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
---------	-----	-------------	---------------	-------	-----	---------------------------------	--

Step 0 To 5 By 512 1024

SrcSi24	r/w	base 1dP	1450 17834	35668	Enum <i>Enum_Inp_SamAla</i>	Signal source 24: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 1), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
---------	-----	-------------	---------------	-------	--------------------------------	---

Step 0 To 5 By 512 1024

0	Not active
1	The input circuit alarm FAIL is displayed by the common alarm.
2	The limit value alarm Lim1 is displayed by the common alarm.
3	The limit value alarm Lim2 is displayed by the common alarm.
4	The limit value alarm Lim3 is displayed by the common alarm.
5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
6	The heating current alarm (HC alarm) is displayed by the common alarm.
7	The short-circuit alarm SSR is displayed by the common alarm.

ChnSi24	r/w	base 1dP	1451 17835	35670	Int	0...30 <input type="checkbox"/>	Signal source 24: Channel. Generation of a common alarm from many individual signal sources (here signal source 2), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
---------	-----	-------------	---------------	-------	-----	---------------------------------	---

Step 0 To 5 By 512 1024

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi25	r/w	base 1dP	145235672 17836	Enum	<i>Enum_Inp_SamA la</i>	Signal source 25: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 25), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024	0	Not active
					1	The input circuit alarm FAIL is displayed by the common alarm.
					2	The limit value alarm Lim1 is displayed by the common alarm.
					3	The limit value alarm Lim2 is displayed by the common alarm.
					4	The limit value alarm Lim3 is displayed by the common alarm.
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
					6	The heating current alarm (HC alarm) is displayed by the common alarm.
					7	The short-circuit alarm SSR is displayed by the common alarm.
ChnSi25	r/w	base 1dP	145335674 17837	Int	0...30 <input type="checkbox"/>	Signal source 25: Channel. Generation of a common alarm from many individual signal sources (here signal source 25), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024		
SrcSi26	r/w	base 1dP	145435676 17838	Enum	<i>Enum_Inp_SamA la</i>	Signal source 26: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 26), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024	0	Not active
					1	The input circuit alarm FAIL is displayed by the common alarm.
					2	The limit value alarm Lim1 is displayed by the common alarm.
					3	The limit value alarm Lim2 is displayed by the common alarm.
					4	The limit value alarm Lim3 is displayed by the common alarm.
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
					6	The heating current alarm (HC alarm) is displayed by the common alarm.
					7	The short-circuit alarm SSR is displayed by the common alarm.
ChnSi26	r/w	base 1dP	145535678 17839	Int	0...30 <input type="checkbox"/>	Signal source 26: Channel. Generation of a common alarm from many individual signal sources (here signal source 26), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By			512	1024		

**16 SamAlar**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi27	r/w	base 1dP	1456 17840	35680	Enum <i>Enum_Inp_SamAla</i>	Signal source 27: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 27), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.

ChnSi27	r/w	base 1dP	1457 17841	35682	Int	0...30 <input type="checkbox"/>	Signal source 27: Channel. Generation of a common alarm from many individual signal sources (here signal source 27), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024							

SrcSi28	r/w	base 1dP	1458 17842	35684	Enum <i>Enum_Inp_SamAla</i>	Signal source 28: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 28), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.

ChnSi28	r/w	base 1dP	1459 17843	35686	Int	0...30 <input type="checkbox"/>	Signal source 28: Channel. Generation of a common alarm from many individual signal sources (here signal source 28), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024							

## 16 SamAlar

## • ConF

Name	r/w	Adr.	real	Typ	Value/off	Description
SrcSi29	r/w	base 1dP	146035688 17844	Enum	<i>Enum_Inp_SamA la</i>	Signal source 29: Alarm signal. Generation of a common alarm from many individual signal sources (here Signal 29), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi29	r/w	base 1dP	146135690 17845	Int	0...30 <input type="checkbox"/>	Signal source 29: Channel. Generation of a common alarm from many individual signal sources (here signal source 29), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						
SrcSi30	r/w	base 1dP	146235692 17846	Enum	<i>Enum_Inp_SamA la</i>	Signal source 30: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 30), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						0 Not active
						1 The input circuit alarm FAIL is displayed by the common alarm.
						2 The limit value alarm Lim1 is displayed by the common alarm.
						3 The limit value alarm Lim2 is displayed by the common alarm.
						4 The limit value alarm Lim3 is displayed by the common alarm.
						5 The control loop monitoring alarm (loop alarm) is displayed by the common alarm.
						6 The heating current alarm (HC alarm) is displayed by the common alarm.
						7 The short-circuit alarm SSR is displayed by the common alarm.
ChnSi30	r/w	base 1dP	146335694 17847	Int	0...30 <input type="checkbox"/>	Signal source 30: Channel. Generation of a common alarm from many individual signal sources (here signal source 30), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By 512 1024						

**16 SamAlar**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description	
SrcSi31	r/w	base 1dP	1464 17848	35696	Enum	<i>Enum_Inp_SamAla</i>	Signal source 31: Alarm signal. Generation of a common alarm from many individual signal sources (here signal source 31), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024	
					0	Not active	
					1	The input circuit alarm FAIL is displayed by the common alarm.	
					2	The limit value alarm Lim1 is displayed by the common alarm.	
					3	The limit value alarm Lim2 is displayed by the common alarm.	
					4	The limit value alarm Lim3 is displayed by the common alarm.	
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.	
					6	The heating current alarm (HC alarm) is displayed by the common alarm.	
					7	The short-circuit alarm SSR is displayed by the common alarm.	

ChnSi31	r/w	base 1dP	1465 17849	35698	Int	0...30	<input type="checkbox"/>	Signal source 31: Channel. Generation of a common alarm from many individual signal sources (here signal source 31), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024		

SrcSi32	r/w	base 1dP	1466 17850	35700	Enum	<i>Enum_Inp_SamAla</i>		Signal source 32: Alarm signal. Generation of a common alarm from many individual signal sources (here Signal 32), each of which is specified together with channel and ALARMSIGNAL (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024		
					0	Not active		
					1	The input circuit alarm FAIL is displayed by the common alarm.		
					2	The limit value alarm Lim1 is displayed by the common alarm.		
					3	The limit value alarm Lim2 is displayed by the common alarm.		
					4	The limit value alarm Lim3 is displayed by the common alarm.		
					5	The control loop monitoring alarm (loop alarm) is displayed by the common alarm.		
					6	The heating current alarm (HC alarm) is displayed by the common alarm.		
					7	The short-circuit alarm SSR is displayed by the common alarm.		

ChnSi32	r/w	base 1dP	1467 17851	35702	Int	0...30	<input type="checkbox"/>	Signal source 32: Channel. Generation of a common alarm from many individual signal sources (here signal source 32), each of which is specified together with CHANNEL and alarm signal (e.g. short circuit alarm Channel 2).
Step 0 To 5 By					512	1024		

## 16 SamAlar

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Inp.Sig.1...	r	base 1dP	147435716 17858	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of the input signals 1...16
Step 0 To 5 By			512	1024	Bit 00 status of input 1 Bit 01 status of input 2 Bit 02 status of input 3 Bit 03 status of input 4 Bit 04 status of input 5 Bit 05 status of input 6 Bit 06 status of input 7 Bit 07 status of input 8 Bit 08 status of input 9 Bit 09 status of input 10 Bit 10 status of input 11 Bit 11 status of input 12 Bit 12 status of input 13 Bit 13 status of input 14 Bit 14 status of input 15 Bit 15 status of input 16	
Inp.Sig.17..	r	base 1dP	147535718 17859	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of the input signals 17...32
Step 0 To 5 By			512	1024	Bit 00 status of input 17 Bit 01 status of input 18 Bit 02 status of input 19 Bit 03 status of input 20 Bit 04 status of input 21 Bit 05 status of input 22 Bit 06 status of input 23 Bit 07 status of input 24 Bit 08 status of input 25 Bit 09 status of input 26 Bit 10 status of input 27 Bit 11 status of input 28 Bit 12 status of input 29 Bit 13 status of input 30 Bit 14 status of input 31 Bit 15 status of input 32	
SamAlm	r	base 1dP	147635720 17860	Int	0...1 <input type="checkbox"/>	The common alarm involves joint processing (OR-linked) of 32 input signals to generate one output signal. This output signal can be wired to an output, or read via the interface.
Step 0 To 5 By			512	1024		



**17** SETP• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
SP.Fn	r/w	base 1dP	112435016 17508	Enum	<i>Enum_SPFN_I</i>	Basic configuration for setpoint processing, e.g. 'setpoint controller switchable to external setpoint'. Configuration of special, controller-dependent setpoint functions.
Step 0 To 29 By 512 1024						0 set-point controller (no startup function)
						1 set-point controller with start-up circuit. The start-up function is a protective function, e.g. with hot runner control. To prevent destruction of high-performance heating elements, they must be heated slowly to remove any humidity. With activated start-up function, the controller maintains the reduced starting temperature for a defined dwell period. Subsequently, the controller switches over to the main setpoint.
TypEing	r/w	base 1dP	112535018 17509	Enum	<i>Enum_TypSetpEing</i>	Input signal type. In order to implement a slave controller, the output of one controller (master) can be used as setpoint for another controller (slave). The source for the setpoint is defined by the signal type (TypEingang) and the channel (ZoneSrc).
Step 0 To 29 By 512 1024						0 The active setpoint Weff is used for this controller.
						1 The controller is a slave controller (cascade) using the analog output Y1 from another controller as setpoint (see channel of the signal source: Conf/Channel/Setp/ChnSrc).
						2 The controller is a slave controller (cascade) using the analog output Y2 from another controller as the setpoint (see channel of the signal source: Conf/Channel/Setp/ChnSrc).
						3 The controller is a slave controller (cascade) using the output Ypid from another controller as setpoint (see channel of the signal source: Conf/Channel/Setp/ChnSrc).

**17 SETP**• **ConF**

Name	r/w	Adr.	real	Typ	Value/off	Description
ChnSrc	r/w	base 1dP	112635020 17510	Enum	Enum_Zone	Definition of the channel whose signal is to be used.
Step 0 To 29 By 512 1024						0 not activ
						1 Signal comes from channel 1.
						2 Signal comes from channel 2.
						3 Signal comes from channel 3.
						4 Signal comes from channel 4.
						5 Signal comes from channel 5.
						6 Signal comes from channel 6.
						7 Signal comes from channel 7.
						8 Signal comes from channel 8.
						9 Signal comes from channel 9.
						10 Signal comes from channel 10.
						11 Signal comes from channel 11.
						12 Signal comes from channel 12.
						13 Signal comes from channel 13.
						14 Signal comes from channel 14.
						15 Signal comes from channel 15.
						16 Signal comes from channel 16.
						17 Signal comes from channel 17.
						18 Signal comes from channel 18.
						19 Signal comes from channel 19.
						20 Signal comes from channel 20.
						21 Signal comes from channel 21.
						22 Signal comes from channel 22.
						23 Signal comes from channel 23.
						24 Signal comes from channel 24.
						25 Signal comes from channel 25.
						26 Signal comes from channel 26.
						27 Signal comes from channel 27.
						28 Signal comes from channel 28.
						29 Signal comes from channel 29.
						30 Signal comes from channel 30.

• **PArA**

Name	r/w	Adr.	real	Typ	Value/off	Description
SP.LO	r/w	base 1dP	112935026 17513	Float	-3000...3200 <input type="checkbox"/>	Lower setpoint limit. The setpoint is raised to this value automatically, if a lower setpoint is adjusted. BUT: The (safety) setpoint W2 is not restricted by the setpoint limits! The setpoint reserve for the step function is 10% of SPHi - SPLo.
Step 0 To 29 By 512 1024						

## 17 SETP

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
SP.Hi	r/w	base 1130 1dP 17514	35028	Float	-3000...3200	<input type="checkbox"/> Upper setpoint limit. The setpoint is reduced to this value automatically, if a higher setpoint is adjusted. BUT: The (safety) setpoint W2 is not restricted by the setpoint limits! The setpoint reserve for the step function is 10% of SPHi - SPLo.
Step 0 To 29 By 512 1024						
SP.2	r/w	base 1131 1dP 17515	35030	Float	-3000...3200	<input type="checkbox"/> Second (safety) setpoint. Ramp function as with other setpoints (effective, external). However, SP2 is not restricted by the setpoint limits.
Step 0 To 29 By 512 1024						
rSP	r/w	base 1132 1dP 17516	35032	Float	0,01...3200	<input checked="" type="checkbox"/> Setpoint gradient [/min] or ramp. Max. rate of change in order to avoid step changes of the setpoint. The gradient acts in the positive and negative directions. Note for self-tuning: with activated gradient function, the setpoint gradient is started from the process value, so that there is no sufficient setpoint reserve.
Step 0 To 29 By 512 1024						
SP.bo	r/w	base 1133 1dP 17517	35034	Float	-3000...3200	<input type="checkbox"/> Boost increase. Increases the setpoint SP for the duration t.bo by the amount SP.bo. The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
Step 0 To 29 By 512 1024						
t.bo	r/w	base 1134 1dP 17518	35036	Float	0...3200	<input type="checkbox"/> Duration of the boost increase in minutes. When the boost time t.bo has elapsed, the controller switches back to the standard setpoint SP. The boost function causes a brief setpoint increase, which is used e.g. to clear blocked channels ('frozen' material) in a hot-runner system.
Step 0 To 29 By 512 1024						
SP.St	r/w	base 1135 1dP 17519	35038	Float	-3000...3200	<input type="checkbox"/> Setpoint for start-up function. The start-up function is a protective function, e.g. with hot runner control. To prevent destruction of high-performance heating elements, they must be heated slowly to remove any humidity. With activated start-up function, the controller maintains the reduced starting temperature for a defined dwell period. Subsequently, the controller switches over to the main setpoint.
Step 0 To 29 By 512 1024						
t.St	r/w	base 1136 1dP 17520	35040	Float	0...3200	<input type="checkbox"/> Start-up dwell period [min]. The start-up function is a protective function, e.g. with hot runner control. To prevent destruction of high-performance heating elements, they must be heated slowly to remove any humidity. With activated start-up function, the controller maintains the reduced starting temperature for a defined dwell period. Subsequently, the controller switches over to the main setpoint.
Step 0 To 29 By 512 1024						

## 17 SETP

## • PArA

Name	r/w	Adr.	real	Typ	Value/off	Description
Gef	r/w	base 1dP	113735042 17521	Enum	Enum_Gefuehrt	Participation in guided setpoint change. The function 'guided setpoint change' permits several zones to be guided to a new (target) setpoint with minimum deviations between the process values, e.g. to prevent thermal stresses. Hereby, the zone with the lowest process value determines the starting setpoint.
Step 0 To 29 By 512 1024						0 Setpoint changes of this channel are not guided. 1 This channel participates in the 'Guided setpoint change'.

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
S.Status	r	base 1dP	114535058 17529	Int	0...3 <input type="checkbox"/>	The status signals special conditions of the setpoint processing, such as an active gradient or an active start-up function.
Step 0 To 29 By 512 1024						Bit 0 Start-up function 0 disabled 1 active Bit 1 Gradient 0 disabled 1 active
SP	r/w	base 1dP	114235052 17526	Float	-3000...3200 <input type="checkbox"/>	Setpoint for the interface (without the additional function 'Controller off'). SetpInterface acts on the internal setpoint before the setpoint processing stage. Note: The value in RAM is always updated. To protect the EEPROM, storage of the value in the EEPROM is timed (at least one value per half hour).
Step 0 To 29 By 512 1024						
SP.d	r/w	base 1dP	114435056 17528	Float	-3000...3200 <input type="checkbox"/>	The effective setpoint is shifted by this value. In this way the setpoints of several controllers can be shifted together, regardless of the individually adjusted effective setpoints.
Step 0 To 29 By 512 1024						
SP.EF	r	base 1dP	114335054 17527	Float	-3000...3200 <input type="checkbox"/>	Effective setpoint. The value reached at the end of setpoint processing, after taking W2, external setpoint, gradient, boost function, programmer settings, start-up function, and limit functions into account. Comparison with the effective process value leads to the control deviation, from which the necessary controller response is derived.
Step 0 To 29 By 512 1024						

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
F.DigEin	r/w	base 1dP	513 33794 16897	Int	0...31 <input type="checkbox"/>	Forcing of digital inputs. Forcing involves the external operation of at least one input. The instrument takes over this input value (preset value for inputs from a superordinate system, e.g. for a function test.)
Bit 0 Forcing of W/W2 switchover Bit 1 Forcing of parameter switchover Bit 2 Forcing of controller disabling (Coff) Bit 3 Forcing of boost activation Bit 4 Forcing of auto/manual switchover						
F.Inp	r/w	base 1dP	517 33802 16901	Float	-1999...9999 <input type="checkbox"/>	Forcing the value for an analog input INP. Forcing involves the external operation of an input. The instrument takes over the value at this input like a measurement value (preset value for inputs from a superordinate system, e.g. for a function test.)
Step 0 To 33 By 1 2						
F.Aus1	r/w	base 1dP	552 33872 16936	Int	0...65535 <input type="checkbox"/>	Forcing involves the external operation of an output. The instrument has no influence on this output (use of free outputs by superordinate system).
Bit 00 forcing for digital output 1 Bit 01 forcing for digital output 2 Bit 02 forcing for digital output 3 Bit 03 forcing for digital output 4 Bit 04 forcing for digital output 5 Bit 05 forcing for digital output 6 Bit 06 forcing for digital output 7 Bit 07 forcing for digital output 8 Bit 08 forcing for digital output 9 Bit 09 forcing for digital output 10 Bit 10 forcing for digital output 11 Bit 11 forcing for digital output 12 Bit 12 forcing for digital output 13 Bit 13 forcing for digital output 14 Bit 14 forcing for digital output 15 Bit 15 forcing for digital output 16						
F.Aus17	r/w	base 1dP	553 33874 16937	Int	0...65535 <input type="checkbox"/>	Forcing involves the external operation of a output. The instrument has no influence on this output (use of free outputs by superordinate system.)
Bit 00 forcing for digital output 17 Bit 01 forcing for digital output 18 Bit 02 forcing for digital output 19 Bit 03 forcing for digital output 20 Bit 04 forcing for digital output 21 Bit 05 forcing for digital output 22 Bit 06 forcing for digital output 23 Bit 07 forcing for digital output 24 Bit 08 forcing for digital output 25 Bit 09 forcing for digital output 26 Bit 10 forcing for digital output 27 Bit 11 forcing for digital output 28 Bit 12 forcing for digital output 29 Bit 13 forcing for digital output 30 Bit 14 forcing for digital output 31 Bit 15 forcing for digital output 32						

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
F.Aus33	r/w	base 1dP	554 33876 16938	Int	0...65535 <input type="checkbox"/>	Forcing involves the external operation of an output. The instrument has no influence on this output (use of free outputs by superordinate system).
Bit 00 forcing for digital output 33 Bit 01 forcing for digital output 34 Bit 02 forcing for digital output 35 Bit 03 forcing for digital output 36 Bit 04 forcing for digital output 37 Bit 05 forcing for digital output 38 Bit 06 forcing for digital output 39 Bit 07 forcing for digital output 40 Bit 08 forcing for digital output 41 Bit 09 forcing for digital output 42 Bit 10 forcing for digital output 43 Bit 11 forcing for digital output 44 Bit 12 forcing for digital output 45 Bit 13 forcing for digital output 46 Bit 14 forcing for digital output 47 Bit 15 forcing for digital output 48						
F.Aus49	r/w	base 1dP	555 33878 16939	Int	0...4096 <input type="checkbox"/>	Forcing involves the external operation of an output. The instrument has no influence on this output (use of free outputs by superordinate system).
Bit 00 forcing for digital output 49 Bit 01 forcing for digital output 50 Bit 02 forcing for digital output 51 Bit 03 forcing for digital output 52 Bit 04 forcing for digital output 53 Bit 05 forcing for digital output 54 Bit 06 forcing for digital output 55 Bit 07 forcing for digital output 56 Bit 08 forcing for digital output 57 Bit 09 forcing for digital output 58 Bit 10 forcing for digital output 59 Bit 11 forcing for digital output 60						
F.Out2	r/w	base 1dP	557 33882 16941	Float	-1999...9999 <input type="checkbox"/>	Forcing value of the analog output. Forcing involves the external operation of an output, i.e. the instrument has influence on this output. (Used for the operation of free outputs e.g. by a supervisory PLC.)
Step 0 To 59 By 1 2						
DigEin	r	base 1dP	617 34002 17001	Int	0...31 <input type="checkbox"/>	Bit-wise coded status of the digital inputs
Bit 0 Status of W/W2 switchover Bit 1 Status of parameter switchover Bit 2 Status of controller disabling (Coff) Bit 3 Status of boost activation Bit 4 Status of auto/manual switchover						

**18 Visual**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
SAInp1	r	base 1dP	61834004 17002	Int	0...65535	<input type="checkbox"/> Bit-wise coded Fail messages of analog inputs 1 ... 16
Bit 00 Fail at input 1 Bit 01 Fail at input 2 Bit 02 Fail at input 3 Bit 03 Fail at input 4 Bit 04 Fail at input 5 Bit 05 Fail at input 6 Bit 06 Fail at input 7 Bit 07 Fail at input 8 Bit 08 Fail at input 9 Bit 09 Fail at input 10 Bit 10 Fail at input 11 Bit 11 Fail at input 12 Bit 12 Fail at input 13 Bit 13 Fail at input 14 Bit 14 Fail at input 15 Bit 15 Fail at input 16						
SAInp17	r	base 1dP	61934006 17003	Int	0...65535	<input type="checkbox"/> Bit-wise coded Fail messages of analog inputs 17 ... 32
Bit 00 Fail at input 17 Bit 01 Fail at input 18 Bit 02 Fail at input 19 Bit 03 Fail at input 20 Bit 04 Fail at input 21 Bit 05 Fail at input 22 Bit 06 Fail at input 23 Bit 07 Fail at input 24 Bit 08 Fail at input 25 Bit 09 Fail at input 26 Bit 10 Fail at input 27 Bit 11 Fail at input 28 Bit 12 Fail at input 29 Bit 13 Fail at input 30 Bit 14 Fail at input 31 Bit 15 Fail at input 32						
SAInp33	r	base 1dP	62034008 17004	Int	0...3	<input type="checkbox"/> Bit-wise coded Fail messages of analog inputs 33 and 34.
Bit 00 Fail at input 33 Bit 01 Fail at input 34						
PV	r	base 1dP	62234012 17006	Float	-3000...9999	<input type="checkbox"/> Measurement value after the measurement value correction (e.g. with offset or 2-point correction, and scaling).

Step 0 To 33 By 1 2

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Aus1	r	base 1dP	65734082 17041	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of the digital outputs 1...16
Bit 00 status of digital output 1 Bit 01 status of digital output 2 Bit 02 status of digital output 3 Bit 03 status of digital output 4 Bit 04 status of digital output 5 Bit 05 status of digital output 6 Bit 06 status of digital output 7 Bit 07 status of digital output 8 Bit 08 status of digital output 9 Bit 09 status of digital output 10 Bit 10 status of digital output 11 Bit 11 status of digital output 12 Bit 12 status of digital output 13 Bit 13 status of digital output 14 Bit 14 status of digital output 15 Bit 15 status of digital output 16						
Aus17	r	base 1dP	65834084 17042	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of the digital outputs 17 ... 32
Bit 00 status of digital output 17 Bit 01 status of digital output 18 Bit 02 status of digital output 19 Bit 03 status of digital output 20 Bit 04 status of digital output 21 Bit 05 status of digital output 22 Bit 06 status of digital output 23 Bit 07 status of digital output 24 Bit 08 status of digital output 25 Bit 09 status of digital output 26 Bit 10 status of digital output 27 Bit 11 status of digital output 28 Bit 12 status of digital output 29 Bit 13 status of digital output 30 Bit 14 status of digital output 31 Bit 15 status of digital output 32						



## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
Aus33	r	base 1dP	65934086 17043	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of the digital outputs 33...48
Bit 00 status of digital output 33 Bit 01 status of digital output 34 Bit 02 status of digital output 35 Bit 03 status of digital output 36 Bit 04 status of digital output 37 Bit 05 status of digital output 38 Bit 06 status of digital output 39 Bit 07 status of digital output 40 Bit 08 status of digital output 41 Bit 09 status of digital output 42 Bit 10 status of digital output 43 Bit 11 status of digital output 44 Bit 12 status of digital output 45 Bit 13 status of digital output 46 Bit 14 status of digital output 47 Bit 15 status of digital output 48						
Aus49	r	base 1dP	66034088 17044	Int	0...4096	<input type="checkbox"/> Bit-wise coded status of the digital outputs 49...60
Bit 00 status of digital output 49 Bit 01 status of digital output 50 Bit 02 status of digital output 51 Bit 03 status of digital output 52 Bit 04 status of digital output 53 Bit 05 status of digital output 54 Bit 06 status of digital output 55 Bit 07 status of digital output 56 Bit 08 status of digital output 57 Bit 09 status of digital output 58 Bit 10 status of digital output 59 Bit 11 status of digital output 60						
AnaOut2	r	base 1dP	66234092 17046	Float	-3200...3200	<input type="checkbox"/> Present digital value of the analog output signal (ahead of the D/A converter)
Step 0 To 59 By 1 2						
S.Ala1	r	base 1dP	72234212 17106	Int	0...65535	<input type="checkbox"/> Bit-wise coded alarms for limit value, heating current, and short-circuit of controllers 1 and 2.
Bit 00 - 01 alarm controller 1 Lim1 Bit 02 - 03 alarm controller 1 Lim2 Bit 04 - 05 alarm controller 1 Lim3 Bit 06 heating current alarm contr. 1 Bit 07 short circuit alarm contr. 1 Bit 08 - 09 alarm controller 2 Lim1 Bit 10 - 11 alarm controller 2 Lim2 Bit 12 - 13 alarm controller 2 Lim3 Bit 14 heating current alarm contr. 2 Bit 15 short circuit alarm contr. 2						

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
S.Ala3	r	base 1dP	72334214 17107	Int	0...65535 <input type="checkbox"/>	Bit-wise alarm status coding of the controller 3, 4
Bits 00 - 01 Alarm controller 3 Lim1 Bits 02 - 03 Alarm controller 3 Lim2 Bits 04 - 05 Alarm controller 3 Lim3 Bits 06 Heating current alarm controller 3 Bits 07 Short-circuit alarm controller 3 Bits 08 - 09 Alarm controller 4 Lim1 Bits 10 - 11 Alarm controller 4 Lim2 Bits 12 - 13 Alarm controller 4 Lim3 Bit 14 Heating current alarm controller 4 Bit 15 Short-circuit alarm controller 4						
S.Ala5	r	base 1dP	72434216 17108	Int	0...65535 <input type="checkbox"/>	Bit-wise alarm status coding of the controller 5, 6
Bit 00 - 01 alarm controller 5 Lim1 Bit 02 - 03 alarm controller 5 Lim2 Bit 04 - 05 alarm controller 5 Lim3 Bit 06 heating current alarm contr.5 Bit 07 short circuit alarm contr.5 Bit 08 - 09 alarm controller 6 Lim1 Bit 10 - 11 alarm controller 6 Lim2 Bit 12 - 13 alarm controller 6 Lim3 Bit 14 heating current alarm contr. 6 Bit 15 short circuit alarm contr. 6						
S.Ala7	r	base 1dP	72534218 17109	Int	0...65535 <input type="checkbox"/>	Bit-wise alarm status coding of the controller 7, 8
Bit 00 - 01 alarm controller 7 Lim1 Bit 02 - 03 alarm controller 7 Lim2 Bit 04 - 05 alarm controller 7 Lim3 Bit 06 heating current alarm contr.7 Bit 07 short circuit alarm contr.7 Bit 08 - 09 alarm controller 8 Lim1 Bit 10 - 11 alarm controller 8 Lim2 Bit 12 - 13 alarm controller 8 Lim3 Bit 14 heating current alarm contr. 8 Bit 15 short circuit alarm contr. 8						
S.Ala9	r	base 1dP	72634220 17110	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of controllers 9, 10
Bit 00 - 01 alarm controller 9 Lim1 Bit 02 - 03 alarm controller 9 Lim2 Bit 04 - 05 alarm controller 9 Lim3 Bit 06 heating current alarm contr.9 Bit 07 short circuit alarm contr.9 Bit 08 - 09 alarm controller 10 Lim1 Bit 10 - 11 alarm controller 10 Lim2 Bit 12 - 13 alarm controller 10 Lim3 Bit 14 heating current alarm contr. 10 Bit 15 short circuit alarm contr. 10						

**18 Visual**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
S.Ala11	r	base 1dP	72734222 17111	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of controllers 11, 12
Bit 00 - 01 alarm controller 11 Lim1 Bit 02 - 03 alarm controller 11 Lim2 Bit 04 - 05 alarm controller 11 Lim3 Bit 06 heating current alarm contr. 11 Bit 07 short circuit alarm contr. 11 Bit 08 - 09 alarm controller 12 Lim1 Bit 10 - 11 alarm controller 12 Lim2 Bit 12 - 13 alarm controller 12 Lim3 Bit 14 heating current alarm contr. 12 Bit 15 short circuit alarm contr. 12						
S.Ala13	r	base 1dP	72834224 17112	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of controllers 13, 14
Bit 00 - 01 alarm controller 3 Lim1 Bit 02 - 03 alarm controller 3 Lim2 Bit 04 - 05 alarm controller 3 Lim3 Bit 06 heating current alarm contr. 3 Bit 07 short circuit alarm contr. 3 Bit 08 - 09 alarm controller 4 Lim1 Bit 10 - 11 alarm controller 4 Lim2 Bit 12 - 13 alarm controller 4 Lim3 Bit 14 heating current alarm contr. 4 Bit 15 short circuit alarm contr. 4						
S.Ala15	r	base 1dP	72934226 17113	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of controllers 15, 16
Bit 00 - 01 alarm controller 15 Lim1 Bit 02 - 03 alarm controller 15 Lim2 Bit 04 - 05 alarm controller 15 Lim3 Bit 06 heating current alarm contr. 15 Bit 07 short circuit alarm contr. 15 Bit 08 - 09 alarm controller 16 Lim1 Bit 10 - 11 alarm controller 16 Lim2 Bit 12 - 13 alarm controller 16 Lim3 Bit 14 heating current alarm contr. 16 Bit 15 short circuit alarm contr. 16						
S.Ala17	r	base 1dP	73034228 17114	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of controllers 17, 18
Bit 00 - 01 alarm controller 17 Lim1 Bit 02 - 03 alarm controller 17 Lim2 Bit 04 - 05 alarm controller 17 Lim3 Bit 06 heating current alarm contr. 17 Bit 07 short circuit alarm contr. 17 Bit 08 - 09 alarm controller 18 Lim1 Bit 10 - 11 alarm controller 18 Lim2 Bit 12 - 13 alarm controller 18 Lim3 Bit 14 heating current alarm contr. 18 Bit 15 short circuit alarm contr. 18						

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
S.Ala19	r	base 1dP	73134230 17115	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of controllers 19, 20
Bit 00 - 01 alarm controller 19 Lim1 Bit 02 - 03 alarm controller 19 Lim2 Bit 04 - 05 alarm controller 19 Lim3 Bit 06 heating current alarm contr.19 Bit 07 short circuit alarm contr.19 Bit 08 - 09 alarm controller 20 Lim1 Bit 10 - 11 alarm controller 20 Lim2 Bit 12 - 13 alarm controller 20 Lim3 Bit 14 heating current alarm contr. 20 Bit 15 short circuit alarm contr. 20						
S.Ala21	r	base 1dP	73234232 17116	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of controllers 21, 22
Bit 00 - 01 alarm controller 21 Lim1 Bit 02 - 03 alarm controller 21 Lim2 Bit 04 - 05 alarm controller 21 Lim3 Bit 06 heating current alarm contr.21 Bit 07 short circuit alarm contr.21 Bit 08 - 09 alarm controller 22 Lim1 Bit 10 - 11 alarm controller 22 Lim2 Bit 12 - 13 alarm controller 22 Lim3 Bit 14 heating current alarm contr. 22 Bit 15 short circuit alarm contr. 22						
S.Ala23	r	base 1dP	73334234 17117	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of controllers 23, 24
Bit 00 - 01 alarm controller 23 Lim1 Bit 02 - 03 alarm controller 23 Lim2 Bit 04 - 05 alarm controller 23 Lim3 Bit 06 heating current alarm contr.23 Bit 07 short circuit alarm contr.23 Bit 08 - 09 alarm controller 24 Lim1 Bit 10 - 11 alarm controller 24 Lim2 Bit 12 - 13 alarm controller 24 Lim3 Bit 14 heating current alarm contr. 24 Bit 15 short circuit alarm contr. 24						
S.Ala25	r	base 1dP	73434236 17118	Int	0...65535 <input type="checkbox"/>	Bit-wise coded status of controllers 25, 26
Bit 00 - 01 alarm controller 25 Lim1 Bit 02 - 03 alarm controller 25 Lim2 Bit 04 - 05 alarm controller 25 Lim3 Bit 06 heating current alarm contr.25 Bit 07 short circuit alarm contr.25 Bit 08 - 09 alarm controller 26 Lim1 Bit 10 - 11 alarm controller 26 Lim2 Bit 12 - 13 alarm controller 26 Lim3 Bit 14 heating current alarm contr. 26 Bit 15 short circuit alarm contr. 26						

**18 Visual**• **Signal**

Name	r/w	Adr.	real	Typ	Value/off	Description
S.Ala27	r	base 1dP	73534238 17119	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of controllers 27, 28
Bit 00 - 01 alarm controller 27 Lim1 Bit 02 - 03 alarm controller 27 Lim2 Bit 04 - 05 alarm controller 27 Lim3 Bit 06 heating current alarm contr.27 Bit 07 short circuit alarm contr.27 Bit 08 - 09 alarm controller 28 Lim1 Bit 10 - 11 alarm controller 28 Lim2 Bit 12 - 13 alarm controller 28 Lim3 Bit 14 heating current alarm contr. 28 Bit 15 short circuit alarm contr. 28						
S.Ala29	r	base 1dP	73634240 17120	Int	0...65535	<input type="checkbox"/> Bit-wise coded status of controllers 29, 30
Bit 00 - 01 alarm controller 29 Lim1 Bit 02 - 03 alarm controller 29 Lim2 Bit 04 - 05 alarm controller 29 Lim3 Bit 06 heating current alarm contr.20 Bit 07 short circuit alarm contr.20 Bit 08 - 09 alarm controller 30 Lim1 Bit 10 - 11 alarm controller 30 Lim2 Bit 12 - 13 alarm controller 30 Lim3 Bit 14 heating current alarm contr. 30 Bit 15 short circuit alarm contr. 30						
Hc.Me	r	base 1dP	73734242 17121	Float	0...9999	<input checked="" type="checkbox"/> Heating current measurement value for the controller. If several heating current monitors are active for one controller, the sum of the heating current measurements is indicated.

Step 0 To 29 By 1 2

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
C.Sta	r	base 1dP	77234312 17156	Int	0...65535	<input type="checkbox"/> Status informations of the controller.f.e. switching signals, controller off or informations about selftuning. The controller sratus shows the actual adjustments of the controller.
Step 0 To 29 By 7 14					Bit 0: Switching signal heating: 0: off 1: on Bit 1: Switching signal cooling: 0: off 1: on Bit 2: Sensor error 0: ok 1: error Bit 3: Controlsignal: Manual/automatic 0: automatic 1: manual Bit 4: Controlsignal: Y2 0: Y2 not activ 1: Y2 activ Bit 5: Controlsignal: Ext. setting of outputsignal 0: not activ 1: activ Bit 6: Controlsignal: Controller off 0: contr. on 1: contr. off Bit 7: Controlsignal:The activ parameter set 0: parameterset 1 1: parameterset 2 Bit 8: Loopalarm 0: no alarm 1: alarm Bit 9: Soft start function 0: not activ 1: activ Bit 10: Rate to setpoint 0: not activ 1: activ Bit 11: Not used Bit 12-15: Internal functional statuses (operating state) 0 0 0 0 Automatic 0 0 0 1 Selftuning is running 0 0 1 0 Selftuning faulty (Waiting for operator signal) 0 0 1 1 Sensor error 0 1 0 0 Not used 0 1 0 1 Manual 0 1 1 1 Not used 1 0 0 0 Manual, with external presetting of the outputsignal 1 0 0 1 Outputs switched off (neutral) 1 0 1 0 Abortion of the selftuning (by control- or error-signal)	
Ypid	r	base 1dP	77334314 17157	Float	-120...120	<input type="checkbox"/> Output value Ypid is the output signal determined by the controller, and from which the switching pulses for the digital and analog control outputs are calculated. Ypid is also available as an analog signal. e.g. for visualization.
Step 0 To 29 By 7 14						
X.Eff	r	base 1dP	77434316 17158	Float	-1999...9999	<input type="checkbox"/> Effective process value. The value resulting from input scaling and measurement value processing, i.e. after input signal processing. Comparison of the effective process value with the effective setpoint results in the value for control deviation, and the corresponding controller response.
Step 0 To 29 By 7 14						

## 18 Visual

## • Signal

Name	r/w	Adr.	real	Typ	Value/off	Description
SP.EF	r	base 1dP	77534318 17159	Float	-1999...9999	<input type="checkbox"/> Effective setpoint. The value reached at the end of setpoint processing, after taking W2, external setpoint, gradient, boost function, programmer settings, start-up function, and limit functions into account. Comparison with the effective process value leads to the control deviation, from which the necessary controller response is derived.
Step 0 To 29 By			7	14		
T.Sta	r	base 1dP	77634320 17160	Int	0...65535	<input type="checkbox"/> Status information during self-tuning, e.g. the actual condition, and possible results, warnings, and error messages.
Step 0 To 29 By			7	14		Bit 0 Process lined out; 0 = No; 1 = Yes Bit 1 Operating mode 'Self-tuning controller; 0 = Off; 1 = On Bit 2 Result of controller self-tuning; 0 = OK; 1 = Fault Bit 3 - 7 Not used Bit 8 - 11 Result of the 'heating' attempt 0 0 0 0 No message / Attempt still running 0 0 0 1 Successful 0 0 1 0 Successful, with risk of exceeded setpoint 0 0 1 1 Error: Wrong operating sense 0 1 0 0 Error: No response from process 0 1 0 1 Error: Turning point too low 0 1 1 0 Error: Risk of exceeded setpoint 0 1 1 1 Error: Step output too small 1 0 0 0 Error: Setpoint reserve too small Bit 12 - 15 Result of 'cooling' attempt (same as heating attempt)
C.Steuer	r/w	base 1dP	77734322 17161	Int	0...65535	<input type="checkbox"/> The control word contains the controller settings required by the user to determine the sequence of their activation, e.g. switchover after manual operation or start of the self-tuning function.
Step 0 To 29 By			7	14		Bit 0 W/W2 0 = W; 1 = W2 Bit 1 Par1/2 0 = Param.1; 1 = Param.2 Bit 2 Coff 0 = On; 1 = Off Bit 3 Boost 0 = Normal; 1 = Boost Bit 4 A/M 0 = Automatic; 1 = Manual Bit 5 Y/Y2 0 = Y; 1 = Y2 Bit 6 AlarmReset 0 = Normal; 1 = Reset Bits 7 - 13 Not used Bit 14 Start of self-tuning 0 = Stop; 1 = Start Bit 15 The controller's parameters have been changed by the self-tuning function. 0 = Not changed; 1 = Changed

