



WACHENDORFF

Prozesstechnik GmbH & Co. KG

UR3274Sx and UR3274Ax Controller User manual

Version 1.0



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Introduction

Dear valued Customer!

Thank you for purchasing and using a product from our company. Various models with 3-4 digits display make the controller suitable for a wide range of applications with temperature, humidity, pressure sensors and linear potentiometers. Output options include two relays and SSR, but the unit is configurable also as visualizer/indicator for applications not requiring control or alarm outputs. PID control with Autotuning function enables to adapt control algorithm to the plant.

For applications with linear potentiometers the function LATCH ON allows a quick calibration. A programming module is available to copy configuration parameters and to keep record of them. For getting the highest effort out of this unit, we kindly ask you to follow the below mentioned instructions:

Every person who is involved with the installation or usage of this unit, must read carefully and understand the installation manual and safety instructions!

1 Safety instructions

1.1 General instructions



To ensure the safe operation of this unit the instructions that appear in this manual must be strictly observed. In addition, when used all applicable legal and safety regulations for the respective application must be observed. The same applies correspondingly to the use of accessories.

1.2 Intended Usage

Units from the controller series UR3274S are used for displaying and monitoring of process values. Any other use is regarded not in accordance with the intended usage.

Units from the controller series UR3274S are not meant to be used as sole safety means to prevent dangerous situations on machinery and installations. Machinery and installations must be so designed that fault conditions can not lead to harmful situations to operating personnel (e.g. by independent limit value switches, mechanical locking etc.).

1.3 Qualified personnel

Units from the controller series UR3274S must only be operated in accordance with the technical specifications by qualified personnel. Personnel regarded qualified is familiar with the installation, assembly, putting into operation and operation of the units and possesses adequate professional qualification for the task.

1.4 Remaining hazards

Units from the controller series UR3274S are state of the art and safe to operate. A risk of danger can occur when deployed and operated improperly by untrained personnel.

In this manual remaining hazards are marked by the following warning symbol:



This symbol indicates that non-observance of the safety guidelines may cause hazards to persons even serious injury or death and/or the possibility of property damage.

1.5 CE Conformity

The CE certificate is available at our company. We are pleased to send you a copy of it. Please feel free and contact us to get a copy.

2 Model Identification

Refer to the table below to easily select preferred model.

All versions available with power 24...230 Vac/Vdc +/-15% 50/60Hz – 4,6VA

UR3274S1 12...24 VAC +/-10 % 50/60 Hz 12 bis 35 VDC

UR3274S3 230 VAC +/-10 % 50/60 Hz

UR3274A1 12...24 VAC +/-10 % 50/60 Hz, 12 bis 35 VDC


UR3274A3 230 VAC +/-10 % 50/60 Hz

3 Technical Data

3.1 General Features

Display	UR3274S1/S3: 3 digits (0,56 inches) UR3274A1/A3: 4 digits (0,40 inches) + 3 Leds (Out1 , Out2 , L1)
Operating temperature	1 relays 8A + 1 Ssr + RS485
Sealing	IP65 front panel (with gasket) IP30 box, IP20 terminals
Material	Polycarbonate UL94V2 self-extinguishing
Weight	100 g

3.2 Hardware Features

Analogue input	AN1. Configurable via software. Thermocouple type: K, S, R, J. Automatic compensation of cold junction from 0°C to 50°C. Thermoresistance: PT100, PT500, PT1000, Ni100, PTC1K, NTC10K (β 3435K). Linear: 0-10V, 0-20 or 4-20mA, 0-40mV Potentiometers: 6K Ω , 150K Ω , 2 Relais OUT1 : 10A resistive on UR3274S1 and UR3274A1 8A resistive with internal transformer UR3274S3/UR3274A3 OUT2 : 5A resistive 1 SSR on UR3274S1 and UR3274A1 12Volt-30mA if supplied 12Vdc 35Volt-30mA if supplied 35Vdc On UR3274S3 and UR3274A3: 8Volt-20mA	Tolerance (25°C) +/-0.2 % \pm 1 digit for thermocouple input, thermo-resistance and V/mA. Cold junction accuracy 0.1°C/°C Impedance: 0-10V: Ri>110K Ω 0-20mA: Ri<5 Ω 4-20mA: Ri<5 Ω 0-40mV: Ri>1M Ω
Relay output	Contacts capacity UR3274S1 And UR3274A1: Q1: 10A-250Vac resistive Q2: 5A -250Vac resistive	
SSR output	 Ground / The negative Output is switched	

3.3 Software Features

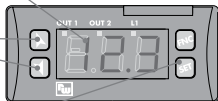
Regulation algorithms	ON-OFF with hysteresis. P, PI, PID, PD with proportional time Manual or automatic Tuning, configurable alarms, protection of command and alarm setpoints, activation of functions via digital input, preset cycle with Start/Stop.
Controller functions	

4 Dimensions and Installation

Display normally shows process value (ex. measured temperature), but can also visualize setpoints or value of entering data.

Visualize set, increase set or scroll parameters (whith fast advancement)

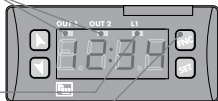
Visualize set, increase set or scroll parameters (whith fast advancement)



Visualize setpoints (ex. programmed temperature): press once for SET1 (Led Out1 flashes), press twice for SET2 (Led Out2 flashes). In configuration mode press with arrow keys to modify value of visualized parameter.

Flashing when setpoint is vvisualized on display and can be modified. ON when output is active.

ON when controller responds to a Master request over serial line RS485.



Enter configuration of parameters (by password). Activate special functions.

5 Change of setpoint value

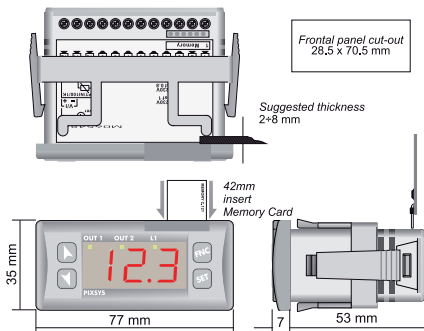
To modify the setpoint value, press **SET** key or one of the arrow-keys: led OUT1 flashes and it is now possible to enter/modify setpoint value by pressing the arrow-keys.

	Press	Display	Do
1	▼ or ▲ or SET	Display shows control setpoint; Led OUT1 flashes.	Press ▲ or ▼ to modify setpoint (fast advancement available). Approx. 4 seconds after last modify, display shows again process value (value read by sensor input).
2	SET	Display shows alarm setpoint and led OUT2 flashes.	Press ▲ or ▼ to increase or decrease setpoint value. When the keys are released, the new value is automatically stored and in a few seconds display shows again process value.

6 Table of Anomaly Signals

	Cause	What to do
E-01	Error in E ² PROM cell programming	Call Assistance
E-02	Cold junction sensor fault or room temperature outside of allowed limits.	Call Assistance
E-04	Incorrect configuration data. Possible lost of calibration values.	Check if the configuration parameters are correct.
E-05	Thermocouple open or temperature outside of limits.	Check the connection with the sensors and their integrity.
E-08	Missing calibration data	Call Assistance

7 Dimensions and Installation



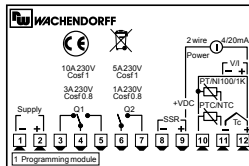
8 Electrical wirings



Although this controller was designed to resist electromagnetic interferences in industrial environments, please observe following safety guidelines:

- Separate the feeder line from the power lines.
- Avoid placing near units with remote control switches, electromagnetic contactors, high powered motors and in all instances use specific filters.
- Avoid placing near power units, particularly if phase controlled.

8.1 Wiring diagram



Power Supply VAC/ VDC model: UR3274S1; UR3274A1



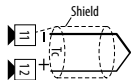
Power Supply 230 VAC model: UR3274S3; UR3274A3



AN1 Analogue Input

For thermocouples K, S, R, J.

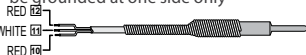
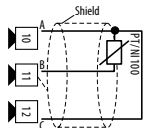
- Comply with polarity
- For possible extensions, use compensa-
ted cable and terminals suitable for the
thermocouples used (compensated)
- When shielded cable is used, it should
be grounded at one side only



- !** Only for UR3274S1 and UR3274A1.
To assure optimal operation of the de-
vice, use ground-isolated sensors. Other-
wise use single isolated transformers for
each controller.

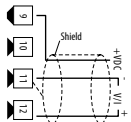
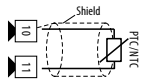
For thermoresistances PT100, NI100

- For the three-wire connection use wires
with the same section
- For the two-wire connection short-
circuit terminals 10 and 12
- When shielded cable is used, it should
be grounded at one side only



For thermoresistances NTC, PTC, PT500, PT1000 e potentiometers

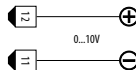
- When shielded cable is used, it should
be grounded at one side only to avoid
ground loop currents



For linear signals V/mA

- Comply with polarity
- When shielded cable is used, it should
be grounded at one side only

Examples of Connection for linear input

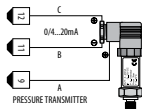


For signals 0...10V

- Comply with polarity
- $R_i >= 10K\Omega$

For signals 0/4...20mA with three-wire sensor

- Comply with polarity
- C = Sensor output
- B = Sensor ground
- A = Sensor power

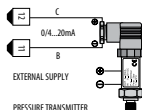


- !** Check power supply requirements on
technical data sheet of sensor!

Capacity 12 V...35 V/30 mA for UR3274S1/A1
Capacity 8V / 20mA for UR3274S3/A3

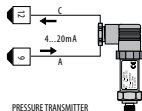
For signals 0/4...20mA with external power of sensor

- Comply with polarity
- C = Sensor output
- B = Sensor ground



For signals 0/4...20mA with two-wire sensor

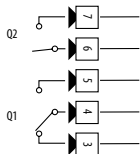
- Comply with polarity
- C = Sensor output
- A = Sensor power supply



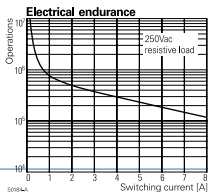
- !** Check power supply requirements on
technical data sheet of sensor!

Capacity 12...24V / 30mA for UR3274S1/A1
Capacity 8V / 20mA for models UR3274S3/A3

Relay Q1 Output



- Q1 capacity 8A/250V~ (UR3274S3/A3) resistive (manoeuvre 2x105min - 8A/250V~)
- Q1 capacity 10A/250V~ (UR3274S1/A1) resistive (manoeuvre 2x105min - 10A /250V~)
- Q2 capacity 5A/250V~ resistive (manoeuvre 2x105min a 3A /250V~)



SSR output



- Capacity 12...35V/30mA on UR3274S1/A1
- Capacity 8V/20mA on models A-B-C
- Command output if configured as SSR

9 Modify configuration parameters

The configuration menu of the unit is password protected to prevent unauthorised access to the instrument set-up. Password cannot be modified.

	Press	Effect	Do
1		After 5 seconds display shows <code>000</code> , first digit on the left is flashing. <code>0000</code> on UR3274A1/A3.	Increase or decrease main setpoint
2		Increase first digit to "1".	Press to reach following digit and enter configuration password "123" for UR3274S1/A1 or "1234" for UR3274S3/A3
3		Display shows first configuration parameter c.o.u for UR3274S1/S3 c.o.u.t for UR3274A1/A3	
4	or	The arrow-keys allow the movement through the configuration table in both forward and backward directions.	Select parameter to modify, press to visualize it and use arrow keys to modify value.

10 Configuration parameters

Anzeige Beschreibung		Auswahl			
		UR3274Sx	UR3274Ax	Beschreibung	
1	UR3274Sx c.o.u UR3274Ax c.o.u.t	Select type of control output	o12	o1.o2	Control Q1 Alarm Q2 (default)
			o15	o1.55	Control Q1 Alarm SSR
			55r	55r	Control SSR Alarm Q1
			o21	o2.o1	Control Q2 Alarm Q1
			5Er	5Er.u	Open Q1 Close Q2
2	5Er.	Select type of connected sensor. ⚠ Only for UR3274S1/A1: To assure optimal working of the unit, use ground-isolated sensors. Otherwise use single isolated transformers for each controller.	tc.t	tc.t	TC type K -260...1360 (default)
			tc.5	tc.5	TC type S -40...1760
			tc.r	tc.r	TC Type R(-40...1760 °C)
			tc.j	tc.j	TC Type J(-200...1200 °C)
			PE	PE	Pt100 (-200...600 °C)
			PE1	PE1	Pt100 (-200...140 °C)
			n1	n1	Ni100 (-60...180 °C)
			ntc	ntc	Ntc 10 KΩ(-40...125 °C)
			Ptc	Ptc	Ptc 1 KΩ(-50...150 °C)
			Pt5	Pt5	Pt500 (-100...600 °C)
			P1t	P1t	Pt1000 (-100...600 °C)
			0.10	0.10	0 bis 10 V
			0.20	0.20	0 bis 20 mA
4.20	4.20	4 bis 20 mA			
Po1	Po1	Potentiometer ≤ 6 KΩ			
Po2	Po2	Potentiometer ≤ 150 KΩ			

Anzeige Beschreibung		Auswahl		Beschreibung	
		UR3274Sx	UR3274Ax		
3	d.P.	Select position decimal point			no decimal point (default)
			0	00	1 decimal point
			00	000	2 decimal points
			0000	3 decimal points	
4	La. 5.	Lower limit selectable for setpoint value	-199 ...	-999 ...	Degrees for temperature sensors
			+999 digit	+9999 digit	Digits for linear signals and potentiometers (default 0)
5	H. i. 5.	Upper limit selectable for setpoint value	-199 ...	-999 ...	Degrees for temperature sensor.
			+999 digit	+9999 digit	Digits for linear signals and potentiometers (default: 999 for UR3274Sx and 1750 for UR3274Ax)
6	La. n.	Lower limit signals V/mA Example: for input 4...20mA, enter on this parameter the value corresponding to 4mA	-199 ...	-999 ...	(default 0)
			+999 digit	+9999 digit	

Anzeige Beschreibung		Auswahl	
		UR3274Sx	UR3274Ax
		Beschreibung	
7	Hi. n. Upper limit signals V/mA Example: for input 4...20mA, enter on this parameter the value corresponding to 20mA	-199 ... +999 digit	-999 ... +9999 digit (default 999)
8	UR3274Sx LAL UR3274Ax LALC (Automatic setting of limits for potentiometers and linear signals)	oFF	Disabled (default)
		Std	Standard
		u.0n	virtual zero stored
9	UR3274Sx cAL.o UR3274Ax cAL.o. Offset calibration. This value is added to the process value visualized on display (usually correcting the ambient temperature)	-19.9... +99.9 units	-19.9... +99.9 units Tenths of degree for temperature. Digits for linear signals and potentiometers (default 0.0)

Anzeige Beschreibung		Auswahl	
		UR3274Sx	UR3274Ax
		Beschreibung	
10	UR3274Sx cAL.G UR3274Ax cAL.G. Gain calibration of sensor input (The visualized number is multiplied for this % value to calibrate process value)	-19.9%... +99.9%	-99.9%... +99.9% (default 0.0)
11	rEG. Type of control	HEA	HEAL
		c.o.o	c.o.oL
		n.r.	n.r.
		n.r.n.	n.r.n.
12	S.c.c. Type of contact for control output in case of error	H.o.o.	H.o.o.
		c.o.	Open contact safety (default)
		c.c.	Closed contact safety

* Parameters 33,34,35,36 are considered only if double action Heating/Cooling (AL selected as c.o.o) and value of P.b. other than 0.

Anzeige Beschreibung		Auswahl		Beschreibung
		UR3274Sx	UR3274Ax	
13	UR3274Sx Ld I	c.d.		On with open contact
	UR3274Ax LEd I	c.c.		On with closed contact (default)
14	UR3274Sx HY.c	-199...	-999...	Tenth of degree for hysteresis or dead band for P.I.D. control
	UR3274Ax HYS.c	+999 digits	+999 digits	Digits for linear signals and potentiometers (default 0.0)
15	P.b.	0 ...	0 ...	0 = ON/OFF °C (temp.) digit (V/mA) (default 0)
		999	9999	
16	t. i.	0 ...	0 ...	seconds (0 excludes Integral) (default 0)
		999	9999	
17	t.d.	0 ...	0 ...	seconds (0 excludes Derivative) (default 0)
		999	9999	

** At starting the output is disabled in case of any alarm condition. After the alarm has been solved, output will be activated only if alarm condition should occur again.

Anzeige Beschreibung		Auswahl		Beschreibung
		UR3274Sx	UR3274Ax	
18	t.c.	1 ... 300		Cycle time for time-proportioning output (usually over 10s for contactors, 1s for SSR, value declared by manufacturer for motorised valves)
				Seconds. Entering 0 the cycle time will be 100ms (default 10)
19	AL			Absolute related to process /Threshold alarm (default)
		A. A.	AL.A.	Band Alarm
		A.d.S	AL.d.S	Deviation high
		A.d.i	AL.d.i	Deviation low
				Operating mode of alarm. Setpoint for alarm is SET2
		A.A.S	AL.A.S	Absolute related to setpoint 1
		COO	COOL	Command output for cooling action for PID Heating/Cooling mode*
		fl.r.	fl.r.	Absolute – with manual reset (after alarm activation, press FNC key to reset the output)

Anzeige Beschreibung		Auswahl		Beschreibung	
		UR3274Sx	UR3274Ax		
20	c.r.A	State of contact for alarm output and type of operating	n.o.S	Normally open, active at Start (default)	
			n.c.S	Normally closed, active at Start	
			n.o.r	Normally open, active at alarm setpoint **	
			n.c.r	Normally closed, active at alarm setpoint **	
			n.o.S	Absolute with manual reset (after alarm activation, press FNC key to reset the output) ; status of relay stored in case of switch-off	
21	S.c.A	State of contact for alarm output in case of error	c.o.	Open contact safety (default)	
			c.c.	Closed contact safety	
22	UR3274Sx Ld2 UR3274Ax LEd2	State of led OUT2 according to relevant contact	c.o.	ON with open contact	
			c.c.	ON with closed contact (default)	
23	UR3274Sx HYA UR3274Ax HYSA	Alarms hysteresis	-199 ... +999 digits	-999 ... +9999 digits	Tenth of degree for temperature sensor. Digits for linear signals and potentiometers (default 0.0)

Anzeige Beschreibung		Auswahl		Beschreibung	
		UR3274Sx	UR3274Ax		
24	UR3274Sx dE.A UR3274Ax dEL.A	Alarm delay	-180... +180 sec.	seconds Negative: delay at alarm deactivation Positive: delay at alarm activation (default 0)	
			25	P.SE	Allow/deny modification of setpoint values by frontal keyboard
P.r.S	P.r.o.S.	Control setpoint SPV1 protected			
P.r.A	P.r.o.A.	Alarm setpoint SPV2 protected			
A.LL	A.LL	Access denied to all setpoints			
26	UR3274Sx F.iL UR3274Ax F.iLE	Software filter. Number of readings to calculate the comparison value PV-SPV	1 ... 15	Number of means (Sampling frequency 15Hz) (default 10)	
			27	UR3274Sx t.un UR3274Ax t.un	Select type of auto-tuning
AuE	AuEo	Automatic			
MAn	MAn.	Manual start of Tuning			
28	UR3274Sx F.nc UR3274Ax F.uNC	Select operating mode and visualization options	d.SE	d.SEt	Double setpoint (default)
			S.SE	S.SEt	Single setpoint
			u.iS	u.iS	Indicator only (no relay output)
28	UR3274Sx F.nc UR3274Ax F.uNC	Select operating mode and visualization options	F.b.n	F.b.n.	Function Neutral zone/ Dead band

Anzeige Beschreibung		Auswahl		Beschreibung
		UR3274Sx	UR3274Ax	
		$P.A.$	$P.A.in$	Hide process and setpoint values
		$1.do$	$1.do\pi$	Domotics 1 : switch off displays and LEDs after 15" since last pressing of keys
		$2.do$	$2.do\pi$	Domotics 2 : switch off only display after 15" since last pressing of keys
		$3.do$	$3.do\pi$	Domotics 3 : switch off the display except for decimal point after 15" since last pressing of keys
		$5.5.u$	$5.5.u.i$	Single setpoint: setpoint always visualized on display. Press $\left(\frac{ON}{OFF}\right)$ to visualize process value (flashing)
29	UR3274Sx G_rA Type of degree	$^{\circ}C$	$^{\circ}C$	Celsius (default)
	UR3274Ax G_rAd	$^{\circ}F$	$^{\circ}F$	Fahrenheit
30	UR3274Sx $ca.F$ Baud rate of serial communication	Air	Air	Set TC2 as 10s and P.B.M as 1.00. (default)
	UR3274Ax $ca.F$	Oil	Oil	Set TC2 as 4s and P.B.M as 1.25.
	UR3274Ax $ca.F$	H_2O	H_2O	Set TC2 as 2s and P.B.M as 2.50.

Anzeige Beschreibung		Auswahl		Beschreibung
		UR3274Sx	UR3274Ax	
31	$P.b.\pi$ Proportional band multiplier for cooling action		1.00 ... 5.00	Proportional band for cooling is given by the value of $P.b.$ (parameter 15) multiplied for the value of this parameter (default 1.00)
32	UR3274Sx $ou.d$ UR3274Ax $ou.d$		-20 ... 50% of $P.b.$ value	Negative value means dead band, positive value means overlapping (default 0)
33	$t.c.z$ Cycle time for cooling output		1 ... 300	Seconds (default 10)
34	$FL.u$ Filter applied to visualization of process. This filter can slow down the refresh of value on display in order to simplify the reading.		OFF	Filter disabled (default)
			$on.F$	Enable filter of first order (time const. 1s).
			$S.2$	Mean on 2 samples
			$S.3$	Mean on 3 samples
			$S.4$	Mean on 4 samples
			$S.5$	Mean on 5 samples
			$S.6$	Mean on 6 samples
			$S.7$	Mean on 7 samples
			$S.8$	Mean on 8 samples
			$S.9$	Mean on 9 samples
	$S.10$	Mean on 10 samples		

11 Tuning

Tuning operation allows the setting of optimal PID parameters in order to assure good control action:

- Stable, “straight-line” control of temperature around setpoint, without fluctuations;
- quick response to deviations from setpoint caused by external noises






Tuning involves calculating and setting of the following parameters:

- Proportional band (inertia of plant; expressed as °C for temperature)
- Integral time (determines the time taken by the controller to remove steady-state error signals, Inertia of plant expresses as time value);
- Derivative time (reaction of controller to change of measured value, usually ¼ of integral time).

Setpoint value cannot be modified during Autotuning.



11.1 Manual start of tuning

Select parameter ξ_{UN} as $\Pi\Pi n$ (manual start)

	Press	Effect	Do
1		Display shows $\xi.\sigma F$	
2		Display shows $\xi.\sigma n$	
3	 or wait for 4 sec.	Display will show process value and ξ_{UN} alternately until the function is completed (it may take a few minutes).	To interrupt the function press  and press  to select $\xi.\sigma F$.

Autotuning

Parameter ξ_{UN} must be selected as $\Pi\Pi \xi$. Autotuning starts automatically when the controller is switched-on or when setpoint value has been modified. Display alternates between process value and the writing ξ_{UN} until the function has been completed (it may take a few minutes).

To interrupt the function, press  and press  to select $\xi.\sigma F$.

12 LATCH ON Function

For application with linear potentiometers $P_{01}/P_{01} I (\leq 6K)$ and $P_{02}/P_{02} I (\leq 150K)$ or $0..10V$ olt , $0/4..20$ mA inputs, the lower limit of scale (see parameter 6 L_{0n}) can be set to minimum position of sensor; it is also possible to set the upper limit of scale (parameter 7 H_{1n}) to the max. position of sensor and this can be done directly on site.







The option “virtual zero” (selecting $\mu.\Pi n$ or $\mu.\Pi S$) allows also to fix the point where the controller will read zero (but still keeping the range of scale between L_{0n} and H_{1n}).

Selecting $\mu.\Pi S$ virtual zero must be reprogrammed at each starting of the controller; selecting $\mu.\Pi n$ virtual zero will be stored after first calibration.

To enable function LATCH ON, select chosen configuration for parameter $L_{AT} \xi$.

¹ Calibration function exits configuration mode after that the relevant parameter has been modified.

For calibration function follow the table below.

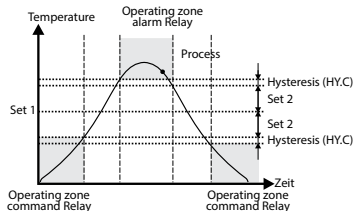
Press	Display	Do
1 	Leave configuration mode. Display shows cycling process value and writing LRC .	Set the sensor on minimum operating value (corresponding to LOR .)
2 	Store minimum value. Display shows LOW	Set the sensor on max. operating value (corresponding to HOR .)
3 	Store max value. Display shows HIG	To exit standard procedure press  . For "virtual zero" settings place the sensor on zero point.
4 	Store virtual zero. Display shows UR . NB: if URS is selected, at starting repeat calibration on point 4.	To exit the procedure press  .



13 Neutral zone Function

The Neutral Zone function (which can be enabled selecting $F.b.N$ on parameter 28 $FNC/FUNC$) allows the setting of a neutral zone control action as described in the graph. In Heating mode (parameter 11 rED), the operating threshold for control relay will be the value resulting from SET1 minus SET2, and the operating threshold for alarm relay will be SET1 plus SET2 (hysteresis is always set via parameter 14 $HY.C/HYS.C$). Within this band both relays are off; one relay works above this band and one relay works below.

In Cooling mode (parameter 11 rED selected as $COO/COOL$) the operating thresholds of both relays are reversed.










Ex. function neutral zone for heating modality ($HEA/HEAT$ on parameter rED)

Standard alarm (band, deviation ...) is not available in this mode.

14 Programming module (optional)

Parameters and setpoint values can be easily copied from one controller to others using the Programming module. The controller must be switched-off before entering the module. Check also entry direction (components must be turned towards front panel). Switching-on the controller, display will show $\Pi.n.0$.²

Press	Display	Do
1    	 shows $\Pi.Ld$,  shows $\Pi.n.0$	Select $\Pi.Ld$ (Memo load) to store values of Programming module on the controller. Select $\Pi.n.0$ to keep values of the controller unchanged.
2 	The controller stores value and restarts.	



Updating values of programming module.

To update values of Programming module follow the above proceedings, selecting $\Pi.n.0$ on display, so values of programming module will not be stored on the controller³. Enter configuration mode, modify at least one parameter and exit.

² Only if values stored on Programming module are correct.

³ If the controller does not visualize $\Pi.n.0$ at starting, this means that no values are stored on Programming module, but they may be copied and updated.

14.1 Programming module with battery (optional)



With the controller not connected to power supply.






The programming module is equipped with an internal battery with an autonomy of about 1000 uses.

Insert the programming module and press the programming buttons.

When writing the parameters, the led turns red and on completing the procedure it changes to green. It is possible to repeat the procedure without any particular attention.

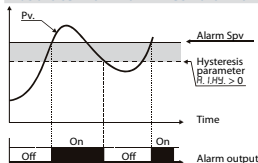
14.2 Loading default value

This procedure makes it possible to restore factory settings of the instrument.

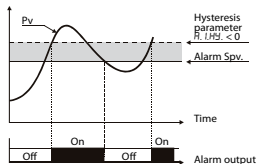
	Press	Effect	Do
1	 for 5 sec.	After 5 seconds display shows 0000 , first digit on the left is flashing 0000 on UR3274Ax	
2	 or 	Change the flashing digit and move to the next one using the  key.	Enter password: 999 (9999 for UR3274Ax)
3	 to confirm	Instrument loads default settings and resets	

15 Alarm Intervention Modes

Absolute Alarm or Threshold Alarm (A. A/AL.A selection)

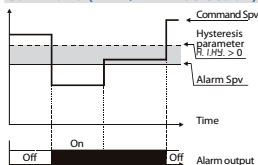


Absolute alarm with controller in heating functioning (Par.11 rEG . selected $HEA/HEA\bar{L}$) and hysteresis value greater than "0".



Absolute alarm with controller in heating functioning (Par.11 rEG . selected $COO/COO\bar{L}$) and hysteresis value less than "0".

Absolute Alarm or Threshold Alarm Referring to Setpoint Command (A.AS/AL.AS selection)

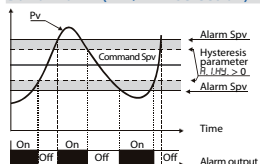


Absolute alarm refers to the command set, with the controller in heating functioning (Par.11 rEG . selected $HEA/HEA\bar{L}$) and hysteresis value greater than "0".

The command set can be

changed by pressing the arrow keys on front panel or using serial port RS485 commands.

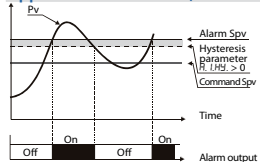
Band Alarm (A.b/AL.b.selection)



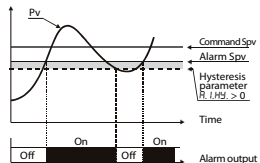
Band alarm with hysteresis.

NB: hysteresis value can't be less than "0".

Upper Deviation Alarm (A.dS/AL.dS.selection)

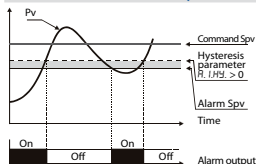


Upper deviation alarm value of alarm setpoint greater than "0" and hysteresis value greater than "0" (Par.23 $HYS.A. > 0$). **NB:** hysteresis value can't be less than "0".



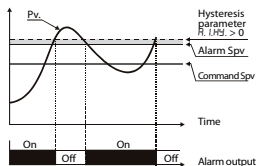
Upper deviation alarm value of alarm setpoint less than "0" and hysteresis value greater than "0" (Par.23 $HYS.A. > 0$). **NB:** hysteresis value can't be less than "0".

Lower Deviation Alarm (R.d1 /AL.d1. selection)



Lower deviation alarm value of alarm setpoint greater than "0" and hysteresis value greater than "0" (Par.23 HYS.A. > 0).

NB: hysteresis value can't be less than "0".



Lower deviation alarm value of alarm setpoint less than "0" and hysteresis value greater than "0" (Par.23 HYS.A. > 0).

NB: hysteresis value can't be less than "0".

16 Summary of Configuration parameters

Date:

Model UR32745x/ UR3274Ax:

Installer:

System:

Notes:

<i>c.out</i>	Select type of command output	o1.o2.
<i>SEn.</i>	Sensor Type	t.c. f
<i>d.P.</i>	Visualization of decimal point	0
<i>Lo.L.S.</i>	Lower limit of setpoint	0
<i>Hi. S.</i>	Upper limit of setpoint	999
	UR32745x	1750
	UR3274Ax	
<i>Lo. n.</i>	Lower limit only for V/I V/mA	0
<i>Hi. n.</i>	Upper limit only for V/I V/mA	999
<i>LRtc</i>	Latch On Function	oFF
<i>cAL.o.</i>	Offset calibration	0.0
<i>cAL.G.</i>	Gain calibration	0.0
<i>rEG.</i>	Type of action	HEAt
<i>S.c.c.</i>	Type of contact for control output in case of anomaly	c.o.
<i>LEd1</i>	Select state of OUT1	c.c.
<i>HYS.c</i>	Hysteresis dead/band	0
<i>P.b.</i>	Proportional band	0
<i>t.i.</i>	Integral time	0
<i>t.d.</i>	Derivative time	0
<i>t.c.</i>	Proportional cycle time	10
<i>AL.</i>	Type of alarm	AL.A
<i>c.r. A.</i>	Contact alarm OUT	n.o.S.
<i>S.c.A.</i>	State of contact for alarm output in case of anomaly	c.o.
<i>LEd2</i>	State of the LED	c.c.
<i>HYS.A</i>	Alarms hysteresis	0

<i>dELA</i>	delay alarm	0
<i>P.SE.</i>	Set protection	FrEE
<i>Filt.</i>	Software filter	10
<i>tunE</i>	Type of autotuning	oFF
<i>Func.</i>	Type of operating	dSEt
<i>GrAd.</i>	Degrees selection	°C
<i>coa.F.</i>	Cooling fluid	Air
<i>P.b.Π.</i>	Proportional band multiplier	100
<i>ov.db.</i>	Overlapping / dead band	0
<i>t.c. 2</i>	Cycle time 2	10
<i>FLt.u</i>	Visualization Filter	oFF

Notes



Wachendorff Prozesstechnik GmbH & Co. KG
Industriestrasse 7 • D-65366 Geisenheim

Tel: +49 (0) 67 22 / 99 65 - 20

Fax: +49 (0) 67 22 / 99 65 - 78

E-Mail: efdi@wachendorff.de

www.wachendorff-prozesstechnik.de