



ATR226

Controller / Regolatore



User manual / Manuale installatore

Index

1	Safety guide lines	5
2	Model Identification	5
3	Technical Data	5
3.1	General Features.....	5
3.2	Hardware Features.....	6
3.3	Software Features	6
4	Dimensions and Installation.....	7
5	Electrical wirings	7
5.1	Wiring diagram.....	8
6	Display and Keys Functions.....	9
6.1	Numeric Indicators (Display).....	10
6.2	Meaning of Status Lights (Led)	10
6.3	Keys.....	10
7	Controller Functions.....	10
7.1	Modifying Main Setpoint and Alarm Setpoint Values.....	10
7.2	Auto-Tuning	11
7.3	Manual Tuning.....	11
7.4	Automatic Tuning.....	11
7.5	Soft-Start.....	11
7.6	Automatic/Manual Regulation for % Output Control	11
7.7	Digital input functions	12
8	Configuration.....	12
8.1	Loading default values	13
9	Table of Configuration Parameters	13
10	Alarm Intervention Modes.....	19
11	Table of Anomaly Signals.....	22
12	Configuration EASY-UP	22
13	Summary of Configuration parameters	23

Sommario

1	Norme di sicurezza	25
2	Identificazione del modello.....	25
3	Dati tecnici	25
3.1	Caratteristiche generali	25
3.2	Caratteristiche Hardware.....	26
3.3	Caratteristiche Software	26
4	Dimensioni ed installazione.....	27
5	Collegamenti elettrici.....	27
5.1	Schema di collegamento.....	28
6	Funzione dei visualizzatori e tasti.....	29
6.1	Indicatori numerici (Display)	30
6.2	Significato delle spie di stato (Led)	30
6.3	Tasti	30
7	Funzioni del regolatore	31
7.1	Modifica valore setpoint principale e setpoint di allarme.....	31
7.2	Auto-Tuning	31
7.3	Lancio del Tuning Manuale	31
7.4	Lancio del Tuning Automatico.....	31
7.5	Soft-Start.....	31
7.6	Regolazione automatico / manuale per controllo % uscita	32
7.7	Funzioni da Ingresso digitale	32
8	Accesso alla configurazione.....	33
8.1	Caricamento valori di default	33
9	Tabella parametri di configurazione	34
10	Modi d'intervento allarme.....	40
11	Tabella segnalazioni anomalie.....	43
12	Configurazione EASY-UP.....	43
13	Promemoria configurazione.....	44

Introduction

Thank you for choosing a Pixsys controller.

With the ATR226 Pixsys model Pixsys makes available in a single device multiple options related to sensor input and actuators command in addition to the extended power range 24..230 Vac/Vdc. With the various selectable sensors and the output configurable as relay or SSR command, the user or retailer can reduce stock by rationalising investment and device availability.

1 Safety guide lines

Read carefully the safety guidelines and programming instructions contained in this manual before using/connecting the device. Disconnect power supply before proceeding to hardware settings or electrical wirings. Only qualified personnel should be allowed to use the device and/or service it and in accordance to technical data and environmental conditions listed in this manual. Do not dispose electric tools together with household waste material. In observance European Directive 2002/96/EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

2 Model Identification

Power supply 24..230 Vac/Vdc +/-15% 50/60 Hz – 5,5 VA

ATR226-12ABC 2 Relays (2A) + 1 SSR + D.I.

3 Technical Data

3.1 General Features

Displays 4 0,40 inch displays+ 4 0,30 inch displays

Operating temperature 0-45 °C - Humidity 35..95 uR%

Sealing IP65 front panel (with gasket)
IP20 box and terminals

Material PC ABS UL94VO self-extinguishing

Weight 130 g

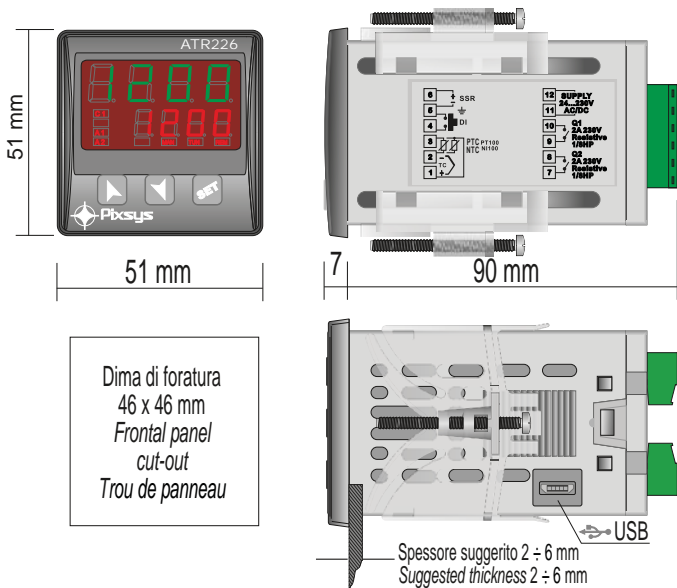
3.2 Hardware Features

Power supply	24..230 Vac/Vdc $\pm 15\%$ 50/60 Hz	Consumption: 5.5 VA.
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).	Tolerance (25 °C) +/-0.3% ± 1 digit (su F.s.) Cold junction accuracy 0.1 °C/°C.
Relay outputs	2 relays configurable as command and/or alarm output.	Contacts 2 A - 250 V~. Resistive loads.
SSR output	1 SSR (ATR226-12ABC). Configurable as command output and/or alarm output.	12V/30mA.

3.3 Software Features

Regulation algorithms	ON-OFF with hysteresis. P, P.I., PID, P.D. with proportional time.
Proportional band	0..9999 °C o °F
Integral time	0,0..999,9 sec. (0 excluded)
Derivative time	0,0..999,9 sec. (0 excluded)
Controller functions	Manual or automatic Tuning, protection of command and alarm setpoints, activation of functions via digital input.

4 Dimensions and Installation



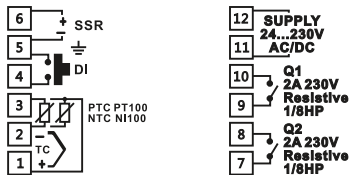
5 Electrical wirings



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

- Separate the control line from the power wires.
- Avoid proximity of remote control switches, electromagnetic contactors, powerful engines and in all instances use specific filters.
- Avoid proximity of power groups, especially those with phase control.

5.1 Wiring diagram



ATR226-12ABC

Power Supply



Switching power supply with extended range 24...230 Vac/dc $\pm 15\%$ 50/60 Hz – 5,5 VA (galvanically insulated).

AN1 Analogue Input

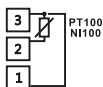


For thermocouples K, S, R, J, T, E, N, B.

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

For thermoresistances PT100, NI100

- For the three-wire connection use wires with the same section
- For the two-wire connection short-circuit terminals 1 and 3
- When shielded cable is used, it should be grounded at one side only



For thermoresistances NTC, PTC, PT500, PT1000 and linear potentiometers

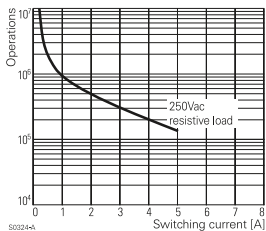
- When shielded cable is used, it should be grounded at one side only to avoid ground loop currents

Relay Q1 - Q2 Output



Contacts capacity 5 A / 250 V~ resistive loads.

NB: see graphic below.



Electrical endurance Q1 / Q2.

2 A, 250 Vac, resistive load, 10⁵ operations.

20/2 A, 250 Vac, cosφ = 0.3, 10⁵ operations.

SS0224-A

SSR output



SSR command output 12 V / 30 mA.

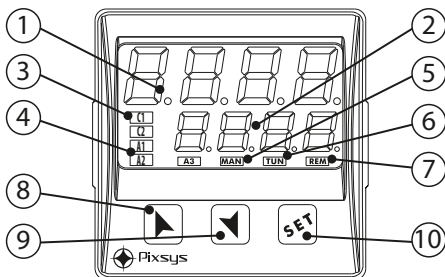
Digital Input



Digital input according to parameter dCk i.

⚠ To activate the digital input, shortcircuit pins 4 and 5.

6 Display and Keys Functions



6.1 Numeric Indicators (Display)

1		Normally displays the process. During configuration phase, it displays the parameter being entered.
2		Normally displays the setpoint. During configuration phase, it displays the parameter value being entered.

6.2 Meaning of Status Lights (Led)

3	C1	ON when the output command is on.
4	A1 A2	ON when the corresponding alarm is active.
5	MAN	ON when the "Manual" function is on.
6	TUN	ON when the controller is running an "Autotuning" cycle.
7	REM	ON when the controller communicates via serial port (USB).

6.3 Keys

8		<ul style="list-style-type: none">Increases main setpoint.During configuration phase, allows to slide through parameters. Together with it modifies them.Pressed after increases alarm setpoint.
9		<ul style="list-style-type: none">Decreases main setpoint.During configuration phase, allows to slide through parameters. Together with it modifies them.Pressed after decreases alarm setpoint.
10		<ul style="list-style-type: none">Allows to display alarm setpoints and runs the Tuning function.Allows to modify configuration parameters.

7 Controller Functions

7.1 Modifying Main Setpoint and Alarm Setpoint Values

Setpoint value can be modified by keyboard as follows:

	Press	Display	Do
1	or	Value on display 2 changes.	Increase or decrease main setpoint.
2		Visualizes alarm setpoint on display 1	
3	or	Value on display 2 changes .	Increase or decrease the alarm setpoint value

7.2 Auto-Tuning

Tuning procedure to calculate regulation parameters can be manual or automatic according to selection on parameter 8 (P. i.d.).

7.3 Manual Tuning

Manual procedure allows the user a greater flexibility to decide when to update PID algorithm parameters. After selected $\overline{P}Rn$ on parameter 8 (P. i.d.), the procedure can be activated in two ways:

- **Running Tuning by keyboard:**

Press **SET** until display 1 shows the writing t_{unE} with display 2 showing OFF , press **▲**, display 2 shows on .

TUN led switches on and the procedure starts.

- **Running Tuning by digital input:**

Select t_{unE} on parameter 25 d_{UE} . At first activation of digital input (commutation on front panel) **TUN** led switches ON while at second activation switches off.

7.4 Automatic Tuning

Automatic tuning procedure has been conceived to give user the possibility to have a clear regulation also without knowledge of PID regulation algorithm. Setting R_{uto} on parameter 8 P. i.d., the controller will check process oscillations and will modify PID parameters.

7.5 Soft-Start

At starting the controller can follow a gradient expressed in units (ex. Degree/Hour) to reach the setpoint.

Enter this gradient on parameter 21 S_{EG} with the chosen units/hour: at next activation the controller will execute the Soft-Start function.

If parameter 24 $S_{E} \overline{P}$ is different from 0, after switch-on and elapsing of the time set on parameter 24, setpoint does not follow the gradient anymore, but it reaches final setpoint with maximum power.

7.6 Automatic/Manual Regulation for % Output Control

This function allows to select automatic functioning or manual command of the output percentage.

By parameter 69 $R_{u} \overline{P}R$ it is possible to select two modes:

1 **First selection** (E_n) pressing **SET** display 1 shows $P---$, while on display 2 appears R_{uto} .

Press **▲** to select $\overline{P}Rn$ mode; it is now possible to modify the output percentage using **▲** and **▼**. To back to automatic mode, using the same procedure, select R_{uto} on display 2: **MAN** led switches off and functioning backs to automatic.

2 **Second selection** ($E_n S_{E}$) enables the same functioning, but with two important variants:

- If there is a temporary power failure or after switch-off, manual functioning as well as the

previous output percentage value will be maintained at restarting.

- If the sensor breaks during automatic functioning, controller moves to manual mode while maintaining the output percentage command unchanged as generated by the PID immediately before breakage.

Ex: on an extruder the resistance percentage command (load) is kept also in case of input sensor failure.














7.7 Digital input functions

On ATR226 digital input can be enabled by parameter 25 *dIGt. i.*

- *zSPu.*: Switch between two setpoint thresholds: with digital input active ATR226 regulates on SET2, otherwise on SET1;
- *rUn.*: Regulation is enabled only with digital input active;
- *tUnE*: Enables/disables Tuning, if parameter 8 *P. i.d.* is set on *MAN*;
- *AutM*: (Automatic/Manual) if par. 19 *AutM* is set on *En* or *EnSt.*, ATR226 regulates in manual mode if digital input active, otherwise the regulation is automatic..
- *ActEt.*: (Action Type) heating regulation with inactive digital input; Cooling regulation with active digital input;
- *o.rSt.*: (Outputs Reset) allows to reset the outputs if Manual reset should be configured for command output and/or alarm outputs.






8 Configuration

For configuration parameters see par. 10.

	Press	Display	Do
1	 for 3 sec.	Display 1 shows 0000 with the 1st digit flashing, while display 2 shows PASS.	
2	 or 	Modify the flashing digit and move to the next one pressing  .	Enter password 1234.
3	 to confirm	Display 1 shows the first parameter while display 2 shows the value	
4	 or 	Slide up/down through parameters.	
5	  or 	Increase or decrease the visualized value pressing  and an arrow key	Enter the new data which will be saved on releasing the keys. To change another parameter return to point 4.
6	 +  together	End of configuration parameter change. The controller exits from programming.	

8.1 Loading default values

This procedure allows to restore factory settings of the device.

	Press	Display	Do
1	 for 3 sec.	Display 1 shows 0000 with the 1st digit flashing, while display 2 shows PASS.	
2	 or 	Modify the flashing digit and move to the next one pressing  .	Enter password 9999.
3	 to confirm	The device loads default settings.	Turn off and restart the device.

9 Table of Configuration Parameters

The parameters list below can be entered by passwords 1234 (for standard) and 5678 (for advanced). Enter password 1357 to access the complete list.

1 *SEn*. Sensor (Password 1234)

Analogue input configuration

<i>Tc.K</i>	Tc-K (Default)	-260 °C..1360 °C
<i>Tc.S</i>	Tc-S	-40 °C..1760 °C
<i>Tc.R</i>	Tc-R	-40 °C..1760 °C
<i>Tc.J</i>	Tc-J	-200 °C..1200 °C
<i>Tc.t</i>	Tc-T	-260 °C..400 °C
<i>Tc.E</i>	Tc-E	-260 °C..980 °C
<i>Tc.n</i>	Tc-N	-260 °C..1280 °C
<i>Tc.b</i>	Tc-B	100 °C..1820 °C
<i>Pt</i>	Pt100	-100 °C..600 °C
<i>Pt I</i>	Pt100	-100 °C..140 °C
<i>n i</i>	Ni100	-60 °C..180 °C
<i>n t c</i>	NTC10K	-40 °C..125 °C
<i>P t c</i>	PTC1K	-50 °C..150 °C
<i>P t 5</i>	Pt500	-100 °C..600 °C
<i>P t 1 t</i>	Pt1000	-100 °C..600 °C

2 *d.P.* Decimal Point (Password 1234)

Select number of displayed decimal points

0	Default
0.0	1 Decimal

3 *dEGr.* Degree (Password 1234)

Select degree type

°C	Celsius (Default)
°F	Fahrenheit

6 *c.out* **Command Output (Password 1234)**

Select command output type

- c.o1* Command on Q1 relay output **Default.** (Q2->AL1; SSR->AL2)
- c.SSR* Command on SSR output (Q1->AL1; Q2->AL2)
- c.o12* Command on Q1 and Q2 output (Q1 n.o.; Q2 n.c.; SSR->AL1)

7 *Act.t.* **Action type (Password 1234)**

- HEAt* Heating (N.A.) (**Default**)
- cool* Cooling (N.C.)

8 *P.i.d.* **PID (Password 1234)**

Select functioning (on/off or PID) and autotuning type

- d.is.* Disabled (on/off) (**Default**)
- Auto* Automatic (P.I.D. automatic calculation of parameters)
- uSEr* User (P.I.D. parameters calculated by manual tune or tune once)
- oncE* Once (P.I.D. parameters calculation only once at starting)
- MAN.* Manuale (P.I.D. automatic parameters calculation by keyboard)

9 *Lo.LS.* **Lower Limit Setpoint (Password 1234)**

-999..+9999 [digit¹] (degrees.tenths for temperature sensors), **Default:** 0.

10 *uP.LS.* **Upper Limit Setpoint (Password 1234)**

-999..+9999 [digit¹] (degrees.tenths for temperature sensors), **Default:** 1750.

11 *o.cAL.* **Offset Calibration (Password 5678)**

Value added/subtracted to the process value (ex: usually correcting the ambient temperature value).

- 999..+1000 [digit¹] for linear sensors and potentiometers.
- 200.0..+100.0 (degrees.tenths for temperature sensors),
- Default** 0.0.

12 *G.cAL.* **Gain Calibration (Password 5678)**

Value multiplied to the process value to calibrate the working point.

- Ex: to correct the range from 0...1000°C showing 0...1010°C, set the parameter to -1.0
- 99.9%..+100.0%, **Default:** 0.0.

13 *c.HY.* **Command Hysteresis (Password 1234)**

Hysteresis in ON/OFF

- 999..+999 [digit¹] (degrees.tenths for temperature sensors). **Default** 0.2.

14 *c.Ld.* **Command Led (Password 5678)**

State of the OUT1 led corresponding to the relevant contact

- o.c.* ON with open contact
- c.c.* ON with closed contact (**Default**)

15 *c. S.E.* **Command State Error (Password 5678)**

State of contact for command output in case of error

o.c. Open contact (**Default**)

c.c. Closed contact

16 *c. S.P.* **Command Setpoint Protection (Password 1234)**

Allows/denies modifications of command setpoint value

FrEE Modifiable by the user (**Default**)

Lock Locked

17 *c. rE.* **Command Reset (Password 5678)**

Type of reset for command contact (always automatic in P.I.D. functioning)

PrE. Automatic Reset (**Default**)

MrE. Manual Reset

MrE.S. Manual Reset Stored (keeps relay status also after an eventual power failure)

18 *c. dE.* **Command Delay (Password 5678)**

Command delay (only in ON / OFF functioning).

-900..+900 seconds. **Default:** 0.

Negative: delay in switching off phase.

Positive: delay in activation phase.

19 *Pr.MR.* **Automatic / Manual (Password 1234)**

Enables automatic/manual selection.

d.S. Disabled (**Default**)

En. Enabled

En.St. Enabled stored

21 *Sft.G.* **Softstart Gradient (Password 5678)**

Rising gradient for Soft-Start

0 Disabled. **Default**

1-9999 (degrees/hour)

24 *S.t.m.* **Softstart Time (Password 5678)**

Max. Softstart duration: the process will follow the gradient only for the time set on parameter, than moves to the max. power.

00.00 Disabled. **Default**

00.01-24.00 hh.mm

25 *dIG. I.* **Digital Input (Password 1234)**

Digital input functioning (see par. 7.7)

d.S. Disabled (**Default**)

2.SP_u 2 setpoint thresholds

run Run

<i>tunE</i>	Tune (impulsive digital input). Parameter 8 <i>P. i.d.</i> must be set as <i>PA</i> .
<i>AuPA</i>	Automatic/Manual
<i>Act.t.</i>	Regulation type
<i>o.rSt</i>	Output reset (impulsive digital input)

26 *d.i.c.t.* **Digital Input Contact Type (Password 1234)**

Select the digital input inactive contact.

<i>o.c.</i>	Open contact (Default)
<i>c.c.</i>	Closed contact

27 *AL1* **Alarm 1 (Password 1234)**

Alarm 1 selection.

<i>d.i.S.</i>	Disabled (Default)
<i>A.AL.</i>	Absolute / threshold, referring to process
<i>b.AL.</i>	Band alarm
<i>H.d.AL.</i>	Upper deviation alarm
<i>L.d.AL.</i>	Lower deviation alarm

28 *ALSo* **Alarm 1 State Output (Password 1234)**

Alarm 1 output contact and intervention type

<i>n.o.S.</i>	(N.O. Start) Normally open, active at start (Default)
<i>n.c.S.</i>	(N.C. Start) Normally closed, active at start
<i>n.o.t.</i>	(N.O. Threshold) Normally open, active on reaching alarm ¹
<i>n.c.t.</i>	(N.C. Threshold) Normally closed, active on reaching alarm ¹

29 *ALHY.* **Alarm 1 Hysteresis (Password 1234)**

-99.9..99.9 °C/°F. **Default:** 0.5 °C

30 *ALId.* **Alarm 1 Led (Password 5678)**

Defines the state of A1 led corresponding to the relative contact

<i>o.c.</i>	ON with open contact
<i>c.c.</i>	ON with closed contact (Default)

31 *ALSE.* **Alarm 1 State Error (Password 5678)**

State of contact for alarm 1 output in case of error.

<i>o.c.</i>	Open contact (Default)
<i>c.c.</i>	Closed contact

32 *ALSP.* **Alarm 1 Setpoint Protection (Password 1234)**

Does not allow the user to modify setpoint.

<i>FrEE</i>	Modifiable by the user (Default)
<i>Loct</i>	Locked
<i>HiDE</i>	Locked and hidden

¹ On activation, the output is inhibited if the controller is in alarm mode. Activates only if alarm condition reappears, after that it was restored.

33 *A1.rE.* **Alarm 1 Reset (Password 5678)**

Type of Reset for contact of alarm 1.

ArE. Automatic Reset (**Default**)

MrE. Manual reset (**SET**)

MrE.S. Manual Reset Stored (keeps relay status also after an eventual power failure)

34 *A1.dE.* **Alarm 1 Delay (Password 5678)**

-900..+900 seconds. **Default:** 0.

Negative: delay in alarm output phase

Positive: delay in alarm entry phase.

35 *AL2* **Alarm 2 (Password 1234)**

Alarm 2 selection.

d.S. Disabled (**Default**)

A.AL. Absolute / threshold, referring to process

b.AL. Band alarm

H.d.AL. Upper deviation alarm

L.d.AL. Lower deviation alarm

36 *AL2.S.o* **Alarm 2 State Output (Password 1234)**

Alarm 2 output contact and intervention type.

n.o.S. (N.O. Start) Normally open, active at start (**Default**)

n.c.S. (N.C. Start) Normally closed, active at start

n.o.t. (N.O. Threshold) Normally open, active on reaching alarm²

n.c.t. (N.C. Threshold) Normally closed, active on reaching alarm²

37 *AL2.HY.* **Alarm 2 Hysteresis (Password 1234)**

-99.9..99.9 °C/°F. **Default:** 0.5.°C

38 *AL2.Ld.* **Alarm 2 Led (Password 5678)**

Defines the state of A2 led corresponding to the relative contact

o.c. ON with open contact

c.c. ON with closed contact (**Default**)

39 *AL2.S.E.* **Alarm 2 State Error (Password 5678)**

State of contact for alarm 2 output in case of error

o.c. Open contact (**Default**)

c.c. Closed contact

² On activation, the output is inhibited if the controller is in alarm mode. Activates only if alarm condition reappears, after that it was restored.

40 *A2.SP.* Alarm 2 Setpoint Protection (Password 1234)

Does not allow the user to modify setpoint

FrEE Modifiable by the user (**Default**)

LoCk Locked

HiDE Locked and hidden

41 *A2.rE.* Alarm 2 Reset (Password 5678)

Type of Reset for contact of alarm 2.

ArE. Automatic Reset (**Default**)

MrE. Manual reset (**SET**)

MrE.S. Manual Reset Stored (keeps relay status also after an eventual power failure)

42 *A2.dE.* Alarm 2 Delay (Password 5678)

-900..+900 seconds. **Default:** 0.

Negative: delay in alarm output phase

Positive: delay in alarm entry phase.

48 *P.b.* Proportional Band (Password 5678)

Process inertia in °C/°F.

0 ON / OFF if t.i. is equal to 0 (**Default**)

1-9999 °C/°F

49 *i.E.* Integral Time (Password 5678)

Process inertia in seconds.

0.0-999.9 secondi (0 = integral disabled), **Default** 0.0

50 *d.E.* Derivative Time (Password 5678)

Normally ¼ of integral time.

0.0-999.9 seconds (0 = derivative disabled), **Default** 0.0

51 *d.b.* Dead Band (Password 5678)

0-1000 [digit1] (degrees.tenths for temperature sensors) (**Default:** 0)

52 *c.E.* Cycle Time (Password 5678)

(for P.I.D. on remote control switch 15 sec., for P.I.D. on SSR 1 sec.)

1-300 seconds (**Default:**15s), If par.6 *c.out* is set as *c.SSr* (**Default:**2s)

53 *L.L.o.P.* Lower Limit Output Percentage (Password 5678)

Selects min. value for command output percentage.

0..100%, **Default:** 0%.

54 *u.L.o.P.* Upper Limit Output Percentage (Password 5678)

Selects max. value for command output percentage.

0 – 100%, Default: 100%.

55 *5.d.t.u.* Setpoint Deviation Tune (Password 5678)

Selects the deviation from the command setpoint for the threshold used by autotuning to calculate the P.I.D. parameters.
0.0-500.0°C/°F. **Default:** 30.0.

56 *π.δ.t.u.* Max Gap Tune (Password 5678)

Selects the max. process-setpoint gap beyond which the automatic tune recalculates PID parameters.
0.1..50.0°C/°F. **Default:** 1.0°C

57 *π.π.p.b.* Minimum Proportional Band (Password 5678)

Selects the min. proportional band value selectable by the automatic tune.
0.0..100.0°C/°F. **Default:** 5.0°C

58 *π.π.p.b.* Maximum Proportional Band (Password 5678)

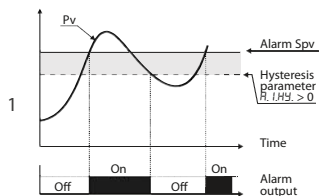
Selects the max. proportional band value selectable by the automatic tune.
0.0..300.0°C/°F. **Default:** 50.0°C

59 *π.π.i.t.* Minimum Integral Time (Password 5678)

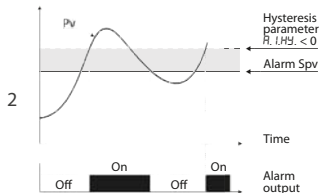
Selects the min. integral time value selectable by the automatic tune.
0.0..999.9 seconds. **Default:** 40.0s.

10 Alarm Intervention Modes

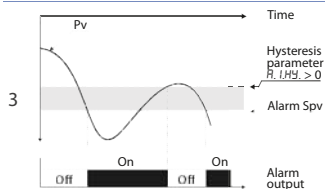
Absolute Alarm or Threshold Alarm (*R. RL* selection)



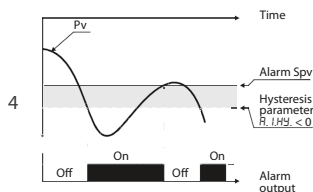
Absolute alarm with controller in heating functioning (Par. 7 *Rc.t.* selected *HEAL*) and hysteresis value greater than "0" (Par.29 *R.I.H.Y.* > 0).*



Absolute alarm with controller in heating functioning (Par.7 *Rc.t.* selected *HEAL*) and hysteresis value less than "0" (Par.29 *R.I.H.Y.* < 0).*

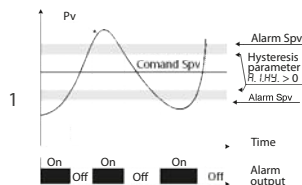


Absolute alarm with controller in cooling functioning
(Par.7 *Rct.L.* selected *CoOL*) and hysteresis greater than "0" (Par.29 *R.I.H.Y.* > 0).*

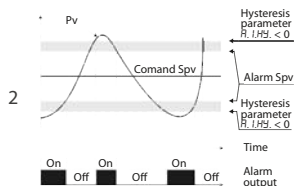


Absolute alarm with controller in cooling functioning
(Par.7 *Rct.L.* selected *CoOL*) and hysteresis value less than "0"(Par.29 *R.I.H.Y.* < 0).*

Band alarm (b. *AL* selection)



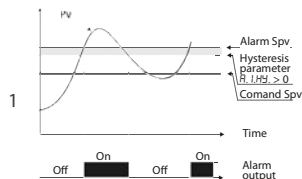
Band alarm hysteresis value greater than "0" (Par.29 *R.I.H.Y.* > 0).*



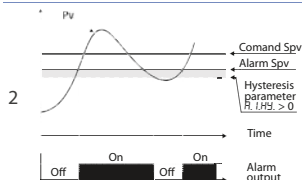
Band alarm hysteresis value less than "0" (Par.29 *R.I.H.Y.* < 0).*

* The example refers to alarm 1; the function can also be enabled for alarm 2

Upper Deviation Alarm (H.d.AL. selection)

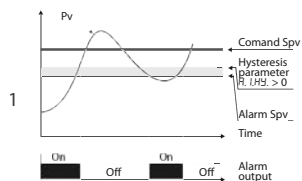


Upper deviation alarm value of alarm setpoint greater than "0" and hysteresis value greater than "0" (Par.29 R. I.H.Y. > 0).**

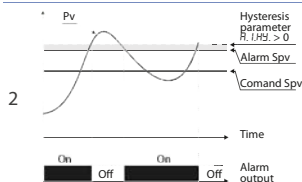


Upper deviation alarm value of alarm setpoint less than "0" and hysteresis value greater than "0" (Par.29 R. I.H.Y. > 0).**

Lower Deviation Alarm (L.d.AL. selection)



Lower deviation alarm value of alarm setpoint greater than "0" and hysteresis value greater than "0" (Par.29 R. I.H.Y. > 0).**



Lower deviation alarm value of alarm setpoint less than "0" and hysteresis value greater than "0" (Par.29 R. I.H.Y. > 0).**

** a) The example refers to alarm 1; the function can also be enabled for alarm 2. b) With hysteresis value less than "0" ($R. I.H.Y. < 0$) the dotted line moves over the alarm setpoint.

11 Table of Anomaly Signals

If installation malfunctions, controller will switch off regulation output and report the anomaly. For example, controller will report failure of a connected thermocouple visualizing *E-05* (flashing) on display 1 and *P-r.b.* (sensor) on display 2. For other signals, see table below.

	Cause	Do
E-01 <i>EEPE</i>	Error in EEPROM cell programming.	Call Assistance.
E-02 <i>545.E</i>	Cold junction sensor fault or room temperature outside of allowed limits	Call Assistance.
E-04 <i>EEPE</i>	Incorrect configuration data. Possible loss of calibration values.	Check if the configuration parameters are correct..
E-05 <i>P-r.b.</i>	Thermocouple open or temperature outside of limits.	Check the connection with the sensors and their integrity.
E-08 <i>545.E</i>	Missing calibration data.	Call Assistance.

12 Configuration EASY-UP

To simplify the setting of parameters and the integration of the different components involved in the control system, Pixsys introduces the EASY-UP coding which allows to set sensors and/or command outputs in one single step.

By means of the code listed in the data sheet enclosed to the sensor or actuator (SSR, motorized valve, etc.) the EASY-UP coding will set the relevant main parameters on the controllers (ex. selection of PT100 on parameter "SEN" and the corresponding measuring range on parameters "Lower and Upper limits of the setpoint").

Different codes may be entered on the controllers in sequence to configure inputs, control output or retransmission of signal.

2200 PT100 (-100..500°C); ON/OFF with hysteresis 1°C on Q1; absolute Alarm 1 on Q2

2201 PT100 (-100..500°C); ON/OFF with hysteresis 1°C on SSR; absolute Alarm 1 on Q1

2204 PT1000 (-100..250°C); ON/OFF with hysteresis 1°C on Q1; absolute Alarm 1 on Q2

2205 PT1000 (-100..250°C); ON/OFF with hysteresis 1°C on SSR; absolute Alarm 1 on Q1

2250 PT100 (-100..500°C); PID automatic tune on Q1; absolute Alarm 1 on Q2

2251 PT100 (-100..500°C); PID automatic tune on SSR; absolute Alarm 1 on Q1

2300 TC J (-100..600°C); ON/OFF with hysteresis 1°C on Q1; absolute Alarm 1 on Q2

2301 TC J (-100..600°C); PID automatic tune on SSR; absolute Alarm 1 on Q1

2400 TC K (-100..850°C); ON/OFF with hysteresis 1°C on Q1; absolute Alarm 1 on Q2

2401 TC K (-100..850°C); PID automatic tune on SSR; absolute Alarm 1 on Q1

13 Summary of Configuration parameters

Date: Model ATR226

Installer: System:

Notes:

1	<i>SEn</i>	Sensor (Password 1234)
2	<i>d.P</i>	Decimal Point (Password 1234)
3	<i>dEGr</i>	Degree (Password 1234)
6	<i>c.out</i>	Command Output (Password 1234)
7	<i>Act.t.</i>	Action type (Password 1234)
8	<i>P.i.d.</i>	PID (Password 1234)
9	<i>Lo.L.S.</i>	Lower Limit Setpoint (Password 1234)
10	<i>uP.L.S.</i>	Upper Limit Setpoint (Password 1234)
11	<i>o.cAL</i>	Offset Calibration (Password 5678)
12	<i>G.cAL</i>	Gain Calibration (Password 5678)
13	<i>c. HY</i>	Command Hysteresis (Password 1234)
14	<i>c. Ld.</i>	Command Led (Password 5678)
15	<i>c. S.E.</i>	Command State Error (Password 5678)
16	<i>c. S.P.</i>	Command Setpoint Protection (Password 1234)
17	<i>c. rE.</i>	Command Reset (Password 5678)
18	<i>c. dE.</i>	Command Delay (Password 5678)
19	<i>Au.MA</i>	Automatic / Manual (Password 1234)
21	<i>SFt.G.</i>	Softstart Gradient (Password 5678)
24	<i>S.t.t.</i>	Softstart Time (Password 5678)
25	<i>dGt. i.</i>	Digital Input (Password 1234)
26	<i>d. i. c. t.</i>	Digital Input Contact Type (Password 1234)
27	<i>AL1</i>	Alarm 1 (Password 1234)
28	<i>Al S.o</i>	Alarm 1 State Output (Password 1234)
29	<i>Al.HY</i>	Alarm 1 Hysteresis (Password 1234)
30	<i>Al.Ld.</i>	Alarm 1 Led (Password 5678)
31	<i>Al.S.E.</i>	Alarm 1 State Error (Password 5678)
32	<i>Al.S.P.</i>	Alarm 1 Setpoint Protection (Password 1234)
33	<i>Al.rE.</i>	Alarm 1 Reset (Password 5678)
34	<i>Al.dE.</i>	Alarm 1 Delay (Password 5678)
35	<i>AL2</i>	Alarm 2 (Password 1234)
36	<i>Al.S.o</i>	Alarm 2 State Output (Password 1234)
37	<i>Al.HY</i>	Alarm 2 Hysteresis (Password 1234)
38	<i>Al.Ld.</i>	Alarm 2 Led (Password 5678)
39	<i>Al.S.E.</i>	Alarm 2 State Error (Password 5678)
40	<i>Al.S.P.</i>	Alarm 2 Setpoint Protection (Password 1234)
41	<i>Al.rE.</i>	Alarm 2 Reset (Password 5678)

