ON/OFF Controllers

CTY2XX
CE

Model	Output	Power Supply V~	Input
CTY231	2 relays	230	PTC
CTY241		24	
CTY232		230	Configurable by H00 parameter (PT100 predisposed)
CTY242		24	

APPLICATION AND USE

CTY are ON/OFF temperature controllers with dual setpoints; dependent or independent and SOFT START function adjustable on the main output.
A series of alphanumeric parameters allows configuring the device according to the required application.

TECHNICAL CHARACTERISTICS

Front protection	IP54
Housing	PC+ABS plastic resin body PC+ABS UL94 V-0
Dimensions	front 72x72 mm, depth 80mm
Mounting	panel with 67x67mm drilling template
Temperature	
- operating	-5T55°C
- storage	-20T85°C
Humidity	10...90% RH (non-condensing)
Display range	-55T150 °C
Analogue input	1 input for PTC sensor (CTY231-241) 1 input selectable by parameter **H00** (CTY232-242)
Serial	TTL for copy card connection
Accuracy	0,5% of scale end + 1 digit
Resolution	0,1 °C
Consumption	4W max
Power supply	2 Switching power types are available:
- B (see page 8)	95...240 V ±10% 50/60Hz
- A (see page 8)	12...24 V / 12...36 Va ±10% 50/60Hz
Digital outputs (configurable)	
- output OUT1	1 SPDT 8(3)A 250 Va
- output OUT2	1 SPST 8(3)A 250 Va
Double visualisation display:	
Top part	PV - Used to display the process value, and the labels of parameters, alarms and functions.
Lower part	SV - Used to display the set points, the parameter values, function status and other status.

Product conforms to EMC 2006/95/EU directive according to the European standard EN 60730-2-9.

KEYS ON THE FRONT PANEL

SET	Accesses the Set point. Opens the Programming Menu Activates functions - Confirms commands
UP ⌃	Scrolls through menu items Increases values - Programmable by parameter (see par. H31)
DOWN ⌄	Scrolls through menu items Decreases values - Programmable by parameter (see par. H32)
fnc	Opens QuickStart menu - ESC (exit) function

DISPLAY AND LED

S.Str	ON if the Soft Start function is active; OFF in all other cases;
out1-out2	ON when output active; otherwise OFF; Flashes if there is a delay, a protection or if activation is blocked
aux	output not used
Alarm (((?)))	ON if there is an alarm; otherwise OFF; Flashes if an alarm is switched off;
°C/°F	Indicates whether the temperature display is in °C or °F; Off for other units of measure

SET POINT ADJUSTMENT

This procedure is to be followed in order to set the 2 setpoint values in the device: **SEt1** and **SEt2.**
When the i initial page is displayed, press and release the Set key.
The **PV** display shows label **SEt1,** and the **SV** display shows the current Setpoint value. Press the Set key again to display the Setpoint 2 in the same way.
The UP and DOWN keys can be used to change the Setpoint value shown on the **SV** display.
When the Set or "fnc" key is pressed, or the Time-out has elapsed (15 sec), the new value appears and the initial display returns.

PROGRAMMING MENU

The programming menu contains all the parameters needed for setting the device functions, and is divided into two levels **user level** and **installer level:** when the Set is pressed on the main display for **3** seconds, the user can access the Parameter Programming menu; the **USEr** label appears, to indicate the user level of the menu.

User level access:
- When at the label **USEr** press and release the Set key to open the folders containing the user level parameters.

Installer level access (InSt):
- When at the label **USEr** the UP and DOWN keys can be used to display the **InSt** label, which indicates the access point of the folders containing the installer level parameters. When **InSt** is displayed, press and release the Set key

How to change the parameter values (in both levels):
Press the UP and DOWN keys to scroll through all the user level folders and, on the desired folder, press the Set key to access the parameters in the folder (for example, the **ALAr folder**).
When the Set key is pressed in the **ALAr** folder, the first parameter in the folder is displayed, as follows:
- PV display: parameter label (**PAO**)
- SV display: current parameter value (**0**)
The Set key can be used to scroll through all the parameters in the folder.
To change the value of a displayed parameter, use the UP and DOWN keys. When the parameter has been set to the desired value, press "fnc", or allow the 15 second time-out to elapse, to save the new parameter setting.
Now press and release the "fnc" key to return to the previous display levels.

At any level of any of the menus, press the "fnc" key, or allow the 15 second time-out to elapse, in order to return to the previous menu level. The last value shown on the display will then be stored in memory.

QUICKSTART MENU

In the main menu, the "fnc" key can be pressed to open the QuickStart menu and to access the special functions, which are useful for setting and managing the device, for example the Functions Folder and the Alarms Folder (if at least one alarm is present).

After pressing the "fnc" key, the UP and DOWN keys can be used to scroll through the folders in the menu. Select a label and press the "set" key in order to access the corresponding folder. The following is a description of the menu structure and the functions of the individual folders:

FUNCTION FOLDER
Press the **FnC** label to access the functions. The label will be displayed, with the current status of the function. To scroll through the available functions, use the Set key. To change the status of a function, use the UP and DOWN keys.

Function	Label function	Status of default	D.I.	Key	Indication function active
Soft Start	SStr	ON	1	1	LED S.Str ON
Stand-by	Stnb	OFF	5	5	/

ALARM FOLDER*
On the **ALAr** label, press Set to access the alarms folder.
This folder contains all the alarms managed by the device.
If no alarm is present, the folder does not appear in the menu.
If any alarm is present, the UP and DOWN keys can be used to scroll through and display them.

* Appears only if at least one alarm is present.

PARAMETER DESCRIPTION

SP1/SP2 Setpoint 1/2 Control Setpoint

CONTROLLER 1/2 (folder with label "rE1"/"rE2")

OS1/OS2 Offset Setpoint 1/2. Temperature value to be added algebraically to the Setpoint, if a reduced set is enabled; it cannot have a 0 value.

db1/db2 Response band above Setpoint 1/2

dF1/dF2 Setpoint 1/2 differential band. With negative sign Heating operation; with positive sign, Cooling operation.
If dF1=0, it goes back to SP1/2, dF1=db1

HS1/HS2 Max value that can be assigned to setpoint 1/2.

LS1/LS2 Minimum value that can be assigned to setpoint 1/2.

HA1/HA2 Max temperature alarm. Temperature limit (the relative or absolute status of this value is controlled by "Att", present in the installer menu, folder ALAr), beyond which the alarm is activated.

LA1/LA2 Minimum temperature alarm. Temperature limit (the relative or absolute status of this value is controlled by "Att", present in the installer menu, folder ALAr) below which the alarm is activated.

dn1/dn2 Delay after which controller 1/2 is started. The delay time indicated must elapse between the request for activation of the controller relay and switch-on.

do1/do2 Delay time after switching off. The delay time indicated must elapse between deactivation of the controller relay and the next switch-on.

di1/di2 Delay between switch-ons. The delay time indicated must elapse between two consecutive switch-ons of the controller.

dE1/dE2 Switch-off delay. The delay time indicated must elapse between the request for deactivation of the controller relay and switch-off.

NOTE: for parameters dn1/2, do1/2, di1/2, dE1/2, 0= not active

On1/On2 Switch-on time for controller due to sensor fault. If set to "0", the controller is always off; if set to "1" with Of1/2 ="0", the controller remains continuously on, and with Of1/2 >0, it operates in Duty Cycle mode. **See the Duty Cycle diagram.**

OF1/OF2 controller switch-off time due to sensor fault. If set to "1" with On1/2 = "0", the controller is always off, and with On1/2 >0 it operates in Duty Cycle mode. **See the Duty Cycle diagram.**

SOFT START CONTROLLER (folder with label "SFt")
see "Soft Start", page 7

dSi Soft Start step value of the controller.

Std Duration of step for Soft Start controller (unit of measure defined by **unt**)

unt Unit of measure for step duration (defines the unit of measure for **Std**): 0=hours; 1=minutes; 2=seconds;

SEn controller selection for Soft Start function. Determines the controller on which the Soft Start function is to be enabled.
0=disabled; 1=enabled on CONTROLLER 1;
2=enabled on CONTROLLER 2
3=enabled on CONTROLLERS 1 and 2;

Sdi Automatic return band for Soft Start function.

CYCLIC CONTROLLER (folder with label "cLc")
see "Cyclic CONTROLLER", page 7
Con ON time for cyclic controller output
CoF Off time for cyclic controller output

ALARM CONTROLLER (folder with label "ALAr")

Att Modes of parameters HA1/HA2 and LA1/LA2: Abs=absolute; rEL=relative;

Afd Alarm differential

PAO Alarm time-out after the device is switched on, following a power failure.

SAO Time-out for "set point not reached" alarm indication.

tAO Time delay for temperature alarm indication.

**AOP** Alarm output polarity: nc=normally closed; no=normally open;
tp alarm identification with any key.
Y=ON; n=OFF.

| Label	Alarm	Cause	EFFECTS	Problem solving
E1	Probe 1 (regulation) faulty	• measured values are outside the nominal range • regulating probe faulty/short-circuited/open	Label **E1** shown on main display but not in the **ALAr** folder;	• check the probe wiring • replace probe
HA1	High temperature alarm	• value read by probe > HA1/2 after time "tAO". (see "ALARMS MIN MAX" diagram and description of parameters "HA1/2" and "Att" and "tAO")	Alarm created in the **ALAr folder** through label **HA1/HA2**	• Wait for the temperature value read by the probe to come back below **HA1/2-AFd**
LA1	Low temperature alarm	• value read by probe < LA1/2 after time "tAO". (see "ALARMS MIN MAX" diagram and parameters "LA1/2" and "Att" e "tAO")	Alarm created in the **ALAr folder** through label **LA1/LA2**	• Wait for the temperature value read by the probe to come back above **LA1/2-AFd**
EAL	External alarm	• alarm regulating with delay set by parameter **H14** from D.I. active if H11=9 or 10 (see **H11** and **H14**)	Alarm Led lit continuously; Alarm indicated in the **ALAr folder** through label **EAL**; If **H11**=10, the regulators are blocked.	• Stop the alarm manually by pressing a key • if **H11**=10, the regulators are activated again only after the digital input is disabled
tOA	Autotuning timeout	• Autotuning cycle aborted within AtO time out	Autotuning is blocked Label **tOA** shown on **SV** display	• Press 'set' button to restore the normal display
nOC	Autotuning failure	• Autotuning cycle failure before time out	Autotuning is blocked Label **nOC** shown on **SV** display	• Press 'set' button to restore the normal display

MAX-MIN ALARMS

Absolute temperature value (par "Att"=0) Abs(olute)
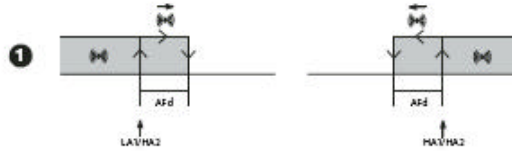
Minimum temperature alarm	Temperature less than or equal to LA1/2 (LA1/2 with sign)
Maximum temperature alarm	Temperature greater than or equal to HA1/2 (HA1/2 with sign)
Returning from minimum temperature alarm	Temperature greater than or equal to LA1/2+AFd
Returning from maximum temperature alarm	Temperature less than or equal to HA1/2-AFd

Temperature relative to Setpoint value (par "Att"=1) rEL(ative)
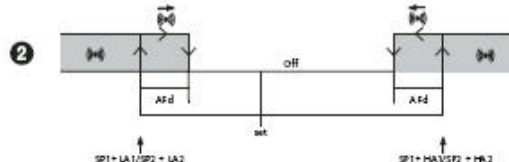
Minimum temperature alarm	Temperature less than or equal to set+LA1/2 (LA1/2 positive only)
Maximum temperature alarm	Temperature greater than or equal to set+HA1/2 (HA1/2 positive only)
Returning from minimum temperature alarm	Temperature greater than or equal to set + LA1/2 + AFd set -|LA1/2|+AFd
Returning from maximum temperature alarm	Temperature less than or equal to set+HA1/2-AFd

if Att=reL(ative) LA1/2 must be negative: therefore,
set+LA1/2<set since set+(-\|LA1/2\|)=set-\|LA1/2\|

DISPLAY (folder with label "diSP")

LOC Keyboard lock (set and keys). It is still possible to go into parameter programming and modify the parameters, including this one, in order to allow keyboard unlocking.
y = yes; n = no.

PA1 Password 1. When enabled (value other than 0), this is the access key to the user level parameters (**USEr**).

PA2 Password 2. When enabled (value other than 0), this is the access key to the installer level parameters (**inSt**).

ndt Format with decimal point. y = yes; n = no.

NOTE: for V/I/Pt100 analogue input model is possible to display up to 3 digit; 0=whole value; 1=1 digit; 2=2 digits; 3=3 digits

CA1 Calibration 1. Positive or negative temperature value added to the value read from sensor 1, according to the setting of parameter "CA"

CAi Calibration operation:
0=sum with displayed temperature only;
1=sum with only the temperature used by the controllers: the display remains unchanged;
2=sum with the displayed temperature, which is also used by the controllers;

LdL Minimum value that can be displayed by the device.

HdL Maximum value that can be displayed by the device.

dro Selection of °C or °F for displaying the temperature read from the sensor. 0 = °C, 1 = °F.

WARNING: if °C is changed to °F or vice versa, the values for setpoint, differential, etc., remain unchanged (for example, set=10°C becomes 10°F).

CONFIGURATION PARAMETERS (folder with label "CnF")

H00 Selection of sensor type
<u>CTY231/241 models</u>
PTC
<u>CTY232/242 models</u>
Pt1=Pt100; 020=0...20mA; 420=4...20mA; t01=0...1V$_C$; t05=0...5V$_C$; t10=0...10V$_C$;

H01 Controller configuration:

H01	Description	OUT1	OUT2
0	free	H21	H22
1	ON/OFF	H/C	H22
2 e 3	free	-	-
4	two independent ON/OFF	H/C	H/C
5	two dependent ON/OFF	H/C	H/C
6	dead zone	H/C	H/C
7...11	free	-	-

H02 Activation time for keyboard functions. For the ESC, UP and DOWN keys, which are configured with a second function, a time is set for activation of the second function.

H03 Current/voltage lower limit (only for V-I-Pt100 models, see parameter H00).

H04 Current/voltage higher limit (only for V-I-Pt100 models, see parameter H00).

H08 Stand By mode: 0= Only display switches off.
1= Display on, control devices and alarms off.
2= Display off, control devices and alarms off.
3= **PV** display with label **OFF** and controllers blocked.

H10 Delay for output activation after Power On; Minimum delay time for connection of utilities in the event of restart after a power failure;

H21* Configurability of digital output 1:
0=disabled; 1=alarm; 2=cyclic; 3=aux/light; 3=not used; 4=stand-by;

H22* Configurability of digital output 2: same as H21
* see table of H01 parameter

H31 Configurability of UP key:
0=disabled; 1=activates/deactivates soft start;
2=activates/deactivates OSP; 3=activates/deactivates cyclic controller; 4=6=7=8=not used; 5=activates/deactivates stand-by;

H32 Configurability of DOWN key: Same as H31

rEL Device version. Read-only parameter.

tAb Reserved. Read-only parameter.

ACCESSORIES

ARAD9672   Hole adapter (96x96 to 72x72) for front panel mounting to replace analogue equipment having drilling template 96x96 (TX283-TX581-TX586 Controlli models and RX500 series).

SENSORS

WIRE SENSORS
for CTY xx1 models (PTC)

SPTC-D   PTC duct sensor (air).
Cable length: 1,5 m - sensor material: AISI 316 - range -55T150 °C

SPTC-C (*)   PTC pipe sensor (water).
Cable length: 1,5 m - sensor material: AISI 316 - range -55T150 °C
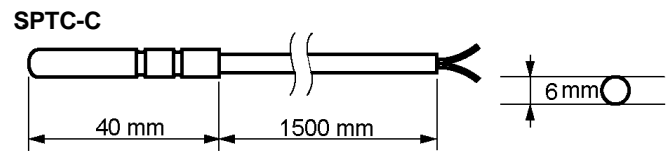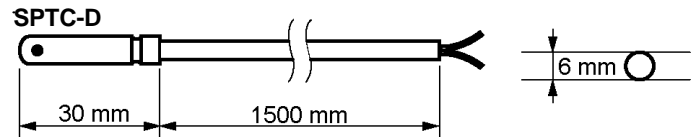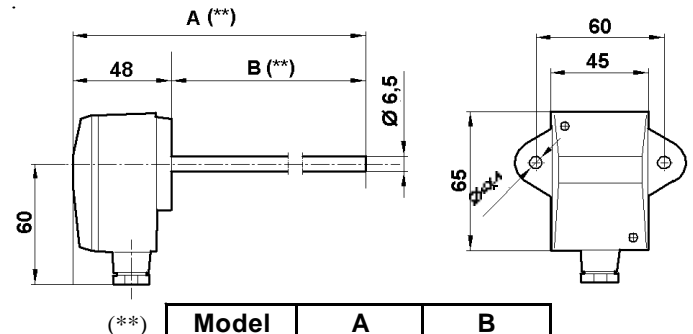
SENSORS WITH STICK ENCLOSED
for CTY xx1 models (PTC)

SPTC-CR(*)   PTC pipe sensor (water) with stick enclosed - sensor material: brass - range -50T150°C

SPTC-V   PTC duct sensor (air) with stick enclosed - sensor material: brass - range -20T65°C

*   It can be combined to 421 (AISI 306) - 422 (nickel-plated brass) pockets.
For mounting with pockets, it is necessary to use thermoconduction pulp, since they have a 7,5 mm hole.

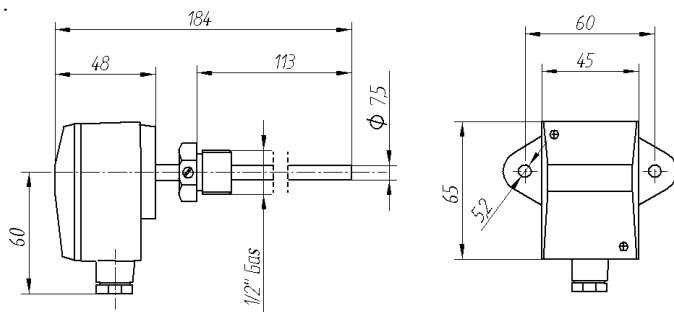**It is always necessary to use 421 or 422 pockets for SPTC-C/CR sensors**

for CTY xx2 models (PT100)

TPC   PT100 sensor (water) - sensor material: platinum - range T500°C (connections: 2 terminals)

SPC   PT100 sensor (water) - sensor material: platinum - range -10T150°C (connections: 2 terminals).

SPTC-D

SPTC-C

SPTC-CR / V

Model	A	B
SPTC-V	348	300
SPTC-CR	184	136

N4035   **SPC**
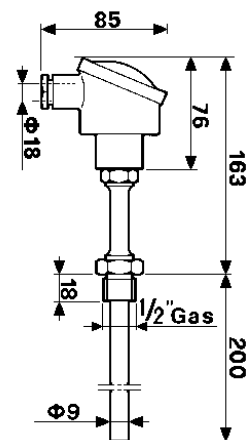
N4102   **TPC**

SENSOR INPUT TABLE

Probe*	Range	Probe error limits	Resolution	Accuracy**
Ptc	-55...150°C	-60...155°C	0,1°C (0,1°F)	0.5% end of scale + 1 digit
Pt100	-200...800°C	-210...810°C	0,1°C (0,2°F)	0.5% end of scale + 1 digit (over entire scale) 0.2% end of scale + 1 digit (-150...300°C)
V-I (1)	0...1 V 0...5 V 0...10 V 0...20 mA 4...20 mA	-1...10 % -0,20...10 % -0,10...3 % 0,05...5 % -6,25...6,25 %	1 digit if **ndt**=0 0,1 digit if **ndt**=1 0,01 digit if **ndt**=2 0,001 digit if **ndt**=3	0.5% end of scale + 1 digit

*   **Important!** Check the sensors and models available.
**   **NOTE:** The accuracy values shown are valid for an ambient temperature of 25°C
(1)The maximum load present on the +12V feed of the sensor is 60mA.

PARAMETER TABLE

Par.	Range	Default	U.M.	Level
SP1	LS1...HS1	0.0	°C/°F	
SP2	LS2...HS2	0.0	°C/°F	

Controller 1 - Label rE1

Par.	Range	Default	U.M.	Level
OS1	-30.0...30.0	0	°C/°F	InSt
db1	0.0...30.0	1.0	°C/°F	USEr/InSt
dF1	-30.0...30.0	-1.0	°C/°F	USEr/InSt
HS1	LS1...HdL	760.0	°C/°F	USEr/InSt
LS1	LdL...HS1	-40.0	°C/°F	USEr/InSt
HA1	LA1...2910.0	2910	°C/°F	USEr/InSt
LA1	-328.0...HA1	-40.0	°C/°F	USEr/InSt
dn1	0...255	0	sec	InSt
do1	0...255	0	min	InSt
di1	0...255	0	min	InSt
dE1	0...255	0	sec	InSt
On1	0...255	0	min	InSt
OF1	0...255	1	min	InSt

Controller 2 - Label rE2

Par.	Range	Default	U.M.	Level
OS2	-30.0...30.0	0	°C/°F	InSt
db2	0.0...30.0	1.0	°C/°F	USEr/InSt
dF2	-30.0...30.0	-1.0	°C/°F	USEr/InSt
HS2	LS2...HdL	760.0	°C/°F	USEr/InSt
LS2	LdL...HS2	-40.0	°C/°F	USEr/InSt
HA2	LA2...2910.0	2910	°C/°F	USEr/InSt
LA2	-328.0...HA2	-40.0	°C/°F	USEr/InSt
dn2	0...255	0	sec	InSt
do2	0...255	0	min	InSt
di2	0...255	0	min	InSt
dE2	0...255	0	sec	InSt
On2	0...255	0	min	InSt
OF2	0...255	1	min	InSt

label diSP

Par.	Range	Default	U.M.	Level
CAi	0...2	2	num	InSt
LdL	-328...HdL	-40.0 / -328(*)	°C/°F	InSt
HdL	LdL...2910.0	2910.0	°C/°F	InSt
dro	0...1	0	Flag	USEr/InSt

label SFt

Par.	Range	Default	U.M.	Level
dSi	0...25	0	°C/°F	InSt
Std	0...255	0	ore/min/sec	InSt
unt	0...2	1	num	InSt
SEn	0...3	1	num	InSt
Sdi	0...30	0	°C/°F	InSt

cLc

Par.	Range	Default	U.M.	Level
Con	0...255	0	min	InSt
CoF	0...255	0	min	InSt

label Alar

Par.	Range	Default	U.M.	Level
Att	AbS/rEL	AbS	flag	InSt
AFd	1...50	2	°C/°F	InSt
PAO	0...10	0	ore	USEr/InSt
SAO	0...24	0	ore	USEr/InSt
tAO	0...255	0	min	USEr/InSt
AOP	nC/nO	nC	Flag	InSt
tP	n/y	n	flag	InSt

label Add

Par.	Range	Default	U.M.	Level
PtS	t/d	t	flag	USEr/InSt
dEA	0...14	0	num	USEr/InSt
FAA	0...14	0	num	USEr/InSt
PtY	n/E/o	E	num	USEr/InSt
StP	1b/2b	1b	flag	USEr/InSt

label diSP

Par.	Range	Default	U.M.	Level
LOC	n/y	n	Flag	USEr/InSt
PA1	0...999	0	num	USEr/InSt
PA2	0...999	0	num	InSt
CA1	-30...30	0	°C/°F	USEr/InSt

label CnF

Par.	Range	Default	U.M.	Level
H00 (*)	ntc/Ptc	Ptc	flag	USEr/InSt
	Pt1/020/420/t01/t05/t10(*)	Pt1 (*)		
H01	0...11	4	num	InSt
H02	0...15	5	sec	InSt
H03(*)	-1999...9999	20.0	num	USEr/InSt
H04(*)	-1999...9999	100.0	num	USEr/InSt
H08	0...2	2	num	InSt
H10	0...255	0	num	USEr/InSt
H21	0...4	0	num	InSt
H22	0...4	0	num	InSt
H31	0...8	0	num	InSt
H32	0...8	0	num	InSt
rEL	/	/	num	USEr/InSt
tAb	/	/	num	USEr/InSt

NOTES:
(*) For CTY232-242 models only
(1) Not used

PASSWORD

Passwords can be set to limit the accesses to each level of parameter management. The two different passwords can be activated by setting parameters PA1 and PA2 in folders "diSP" (PA1 at **USEr** level and PA2 at **InSt** level).

The password is enabled if the value of the parameter PA1/PA2 is different from 0.

To access the "Programming" menu, hold down the "set" key for more than 5 seconds. If it has been set, the PASSWORD will be requested; press Set again.

If activated (value different from 0), password PA1 must be entered. Carry out this operation by selecting the correct value using the UP and DOWN keys, then confirm by pressing the Set key.

If the password entered is incorrect, the device displays the label PAS1 again and the operation must be repeated.

Password PAS2, for the **InSt** level, works in the same way as password **PAS1**.
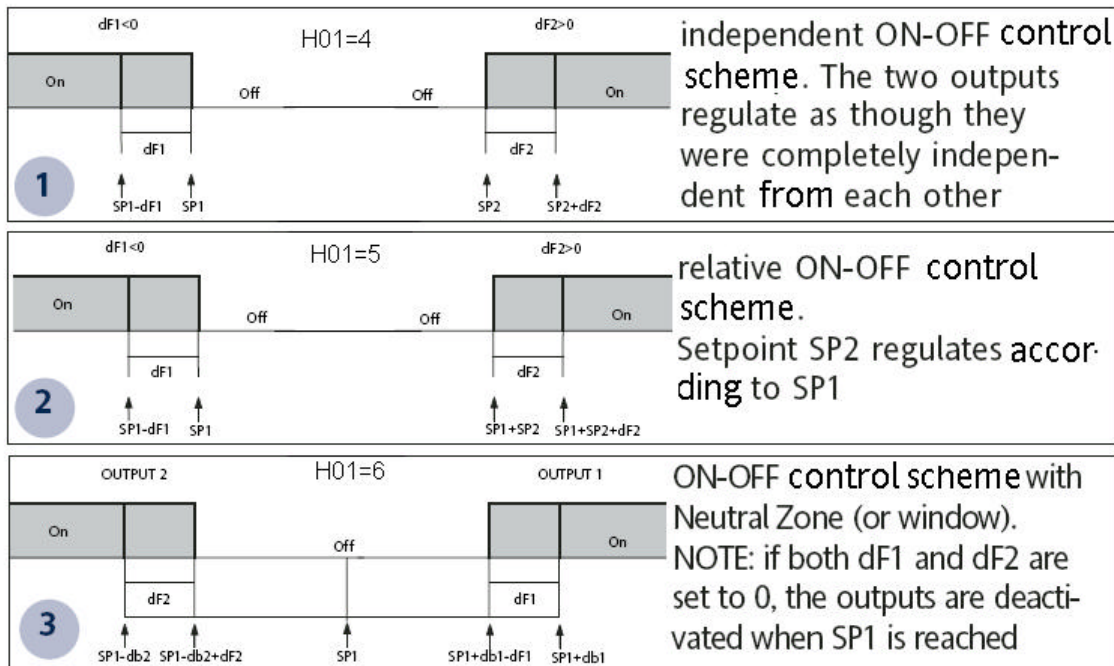
ON/OFF CONTROLLER

The device has two ON/OFF type controllers that can be configured by the user through the H01 parameter:

• **H01**=4, 5 threshold controller

• **H01**=6 controller with window

dF1<0	dF2>0	H01	regulation type
hot	cold	4	independent setpoints
hot	cold	5	relative setpoints
-	-	6	Neutral Zone (or window)

NOTE: examples with dF1<0 ((hot) and dF2>0 (cold)

1 independent ON-OFF control scheme. The two outputs regulate as though they were completely independent from each other

2 relative ON-OFF control scheme. Setpoint SP2 regulates according to SP1

3 ON-OFF control scheme with Neutral Zone (or window). NOTE: if both dF1 and dF2 are set to 0, the outputs are deactivated when SP1 is reached
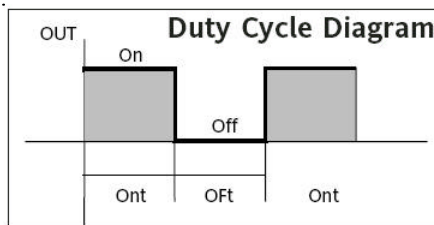
OUTPUT PROTECTION

An error condition in the sensor causes one of the following actions:

• code E1 is shown on the display

• the controller is activated as indicated by parameters On1/On2 and OF1/OF2, if set for Duty Cycle

Duty Cycle Diagram

On1/On2	OF1/OF2	Compressor output
0	0	OFF
0	>0	OFF
>0	0	ON
>0	>0	dc

parameters On1/On2, OF1/OF2 set for Duty Cycle

SOFT START

NOTE: The SOFT START function can be selected by key, by D.I. or by a function.

The Soft Start controller can be used to set the temperature gradient over which a given setpoint is reached within a preset time.

With this function, the control Setpoint is progressively and automatically raised from value Ta (ambient temperature at switch-on) to the value actually set on the display; this allows the initial temperature rise to be slowed down, thus reducing the risk of "overshooting".

CYCLIC CONTROLLER

NOTE: The PERIODIC CYCLE function can be selected by key

This function can be associated to both relay outputs (by setting parameters H21, H22 to 2), and can be used to carry out "Duty Cycle" control with the intervals set by parameters Con and CoF**.**

MOUNTING

The device is designed for panel mounting. Drill a 65x65 mm hole and insert the device; fix it with the special brackets provided.

Do not mount the device in damp and/or dirt-laden areas. It is suitable for use in places with ordinary or normal levels of pollution. Keep the area around the device cooling slots adequately ventilated.
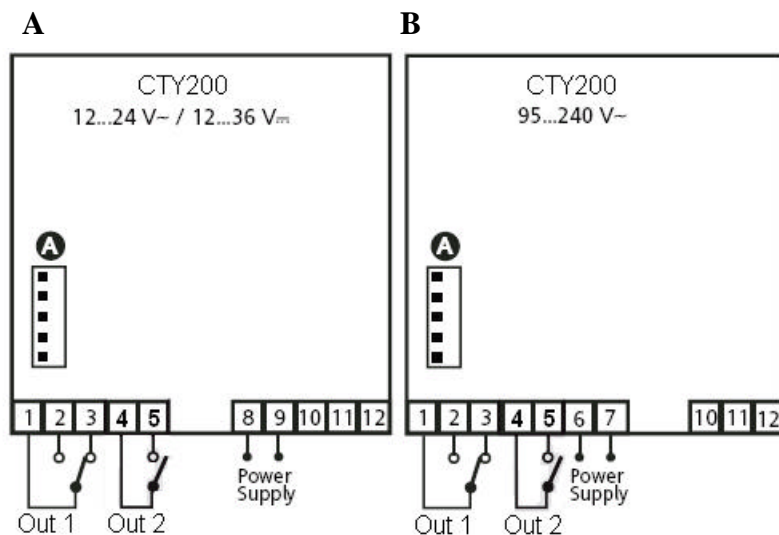
INSTALLATION

The device is preset with H01=4 i.e. with 2 ON/OFF free.

It is necessary to change H01 parameter inside **CnF** folder (**unpower and power again the device**), in case another configuration is used.

The parameters of the new configuration will be available only at this point.
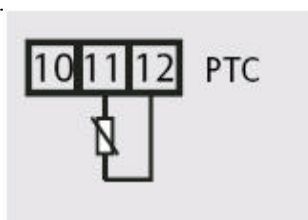
ELECTRICAL CONNECTIONS

Warning! Switch off the device before working on the electrical connections. The device is equipped with screw terminals for connecting electric cables with 2.5 mm2 maximum cross-section (one wire per terminal in the case of power connections): for the capacity of the terminals, see the label on the device. The relay outputs are voltage-free. Do not exceed the maximum allowed current; for higher loads, use a contactor with suitable power capacity. Make sure that the power supply voltage is correct for the device. Note that the length of the cables of analogue I/Os can affect the EMC performance of the instrument, so that it is important to take all possible precautions with the cabling. We recommend keeping I/O cable runs under 3 metres. The sensor cables, power supply cables and the TTL serial cables should be kept separate from power cables.
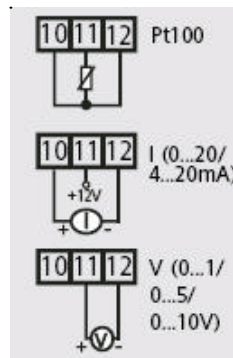
A

CTY200
12...24 V~ / 12...36 V⊽

B

CTY200
95...240 V~

| 1 | 2 | 3 | 4 | 5 | | 8 | 9 | 10 | 11 | 12 |

Out 1   Out 2   Power Supply

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | 10 | 11 | 12 |

Out 1   Out 2   Power Supply

WIRING DIAGRAM

Mod. CTY231-241

| 10 | 11 | 12 | PTC |

Mod. CTY232-242

| 10 | 11 | 12 | Pt100 |

| 10 | 11 | 12 | I (0...20/ 4...20mA) |

+12V

| 10 | 11 | 12 | V (0...1/ 0...5/ 0...10V) |

TERMINALS

1 - 3	N.C. out1 relay par. H21
2 - 3	N.A. out1 relay par. H21
4 - 5	N.A. out2 relay par. H22
10-11-12	Probe input
8 - 9	Power Supply (model A)
6 - 7	Power Supply (model B)
A	TTL input for programming by copy card

The performances stated in this sheet can be modified without any prior notice due to design improvements.

CONTROLLI   Automatic control systems for:
air-conditioning/heating/industrial process.