Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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CROUZET
CONTROL

MIC48 Without RS 485 link Part number 89422012

- Heating and / or cooling function
- 2 independent alarms
- Load break detection
- 2 setpoint which can be selected remotely
- Manual / automatic power adjustment
- RS 485 / MODBUS-JBUS serial communication option

Part numbers

	Type	Output	Supply voltage
89 422 012	Without RS 485 link	Logic	24 V ACDC

Specifications

General characteristics

Supply	100 to 240 VAC, 24 VACDC
Frequency (Hz)	50 / 60
Tolerance	-15 % +10 % Un
Consumption	8 VA max.
Display measurement	red LEDs-4 digits, 7 segment, height 10 mm
Display setpoint	green LEDs-4 digits, 7 segment, height 7,5 mm

Control characteristics

Control algorithm	PID with auto-tune and adaptive tune : SMART
Control type	heat or cool heat / cool
Sampling time linear input	250 ms
Sampling time TC and RTD input	500 ms
Proportional band Pb heat or cool	1,0 to 100 % of scale amplitude
Proportional band Pb heat - cool	1,5 to 100 % of scale amplitude
Proportional band Pb Note : if Pb = 0 % discrete action	▪
Hysteresis (during discrete action)	0,1 to 10 % of scale amplitude
Integral time ti Note : if ti > 20 min	20 s to 20 min integral action is inactive
Derivative time td. Note : if td=0	1 s to 10 min derivative action is inactive
Cycle time heating	1 s →200 s
Cycle time cooling	1 s →200 s
Heat-cool control Cool proportional band	rC x heat proportional band
Heat-cool control rC : relative gain	0,20 →1,00
Heat-cool control dead.overlap band	-20 % to + 50 % of the heat proportional band

Inputs

Thermocouples J, K, R, S, and N	IEC 584-1
Thermocouples L	DIN 43710
Reference junction	Automatic cold junction compensation : 0 to 50 ^{o}C (Thermocouples)
Reference junction drift	0,1 °C / °C
Input impedance (kΩ)	> 1 M Ω
Calibration (IEC 584-1)	▪
Resist. temp. detector 3-wire Pt 100 conforming to DIN 43760	▪
Line resistance	20 Ω max. (Resistance temperature detector)
Input type and standard range TC	L (0/400 °C) (0/1650°F) (0/900 °C) J (0/400 °C) (0/1830°F) (0/1000 °C) K (0/400 °C) (0/2190°F) (0/1200 °C) N (0/1400 °C) (0/2550°F) R (0/1760 °C) (0/3200°F) S (0/1760 °C) (0/3200°F)
Input types and standard rangeRTD Pt100	(-199,9/400,0 °C) (-199,9/400,0°F) (-200/800 °C) (-330/1470°F)
Measurement range	- 1999 →+ 4000
Decimal point	adjustable : - - - -, - - - . -, - -. - -, -. - - -

Current transformer input for monitoring the load break

Inputs	50 mAAC

Unless otherwise specified, the characteristics given are applicable to all or part of the product range selected

Measurement range with transformer	10 A →100 A
Resolution	10 to 20 A : 0.1 A 21 to 100 A : 1 A
Measurement logic threshold	Relay output : NO or NC Logic output : level 1 or 0
Measurement update period	50 ms
Setpoints	- main setpoint : SP - auxiliary setpoint : SP2
Selection input SP/SP2	50 mA AC selection via external N/C type contact

Output

Type of output	discontinuous
Action type	can be programmed for heating and/or cooling
Limitation of output power : SOFT-START- heat action	adjustable from 0 to 100 %
Limitation of output power : SOFT-START-heat/cool action	adjustable from -100 to +100 %

Output specification

OUT 1 Main output N/O contact	3A 250 V AC resistive (N/C contact is possible via a jumper)
OUT 1 Main output logic	Level 0 : <0,5 V DC Level 1 : 14 V DC±20 % @ 20 mA max 24 V DC±20 % @ 1 mA max
Main output cycle time	1 s →99 s
OUT 2 Cool output or alarm 1 output	N/O-2A contact, 250 V AC resistive
OUT 3 Load break output and/or alarm 2 output	N/O-2A contact, 250 V AC resistive

Description of alarms 1 and 2

Type of output	direct or reverse
Functions	absolute alarm band alarm deviation alarm
Reset to zero	Manual / automatic
Inhibition	Configuration
Alarm threshold - absolute alarm	absolute value independent from SP
Alarm threshold - band alarm	value relative to SP, adjustable from 0 to 500 °C/°F
Alarm threshold - deviation alarm	value relative to SP, adjustable from-500 °C/°F (negative deviation) to + 500 °C/°F (positive deviation)
Alarm	0.1 to 10 % of scale amplitude

Serial link

Type	RS485
Protocol	MODBUS, J.BUS
Address	1 →255
Number of data bits	8
Transmission speed	600 →19 200 Bauds
Parity	even, odd, no
Stop bit	1

Physical details and protection

Insulation resistance conforming to IEC 348	> 100 MΩ
Insulation voltage according to IEC 348	1500 V
Immunity to interference conforming to IEC 801-4	Level 3
Immunity to interference conforming to IEC 801-2	8000 V
Accuracy	± 0.2 % of the full measurement scale ± 1 digit at an ambient temperature of 25 °C at Un
Operating temperature range (°C)	0 →+50
Storage temperature range (°C)	-20 →+70 °C
Relative humidity (no condensation)	20 →85 % Rh

Housing

Housing material	self-extinguishing UL94 grade VO
Front panel	Polycarbonate membrane
Protection class according to IEC 529 (IEC 70-1)	IP 54
Connection	screw terminals
Weight (g)	250

Approvals

UL / CSA	in progress

Protection

Safe-guard	detects a fault in the equipment caused by external interference and activates automatic reset without modification of the process.
Switch	the configuration and calibration are accessed via an internal switch, can only be accessed when the device is unplugged.

Medium	air oil water
rC relative gain	1,00 0,80 0,40
Cycle time cooling	10 s 4 s 2 s

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Accessories

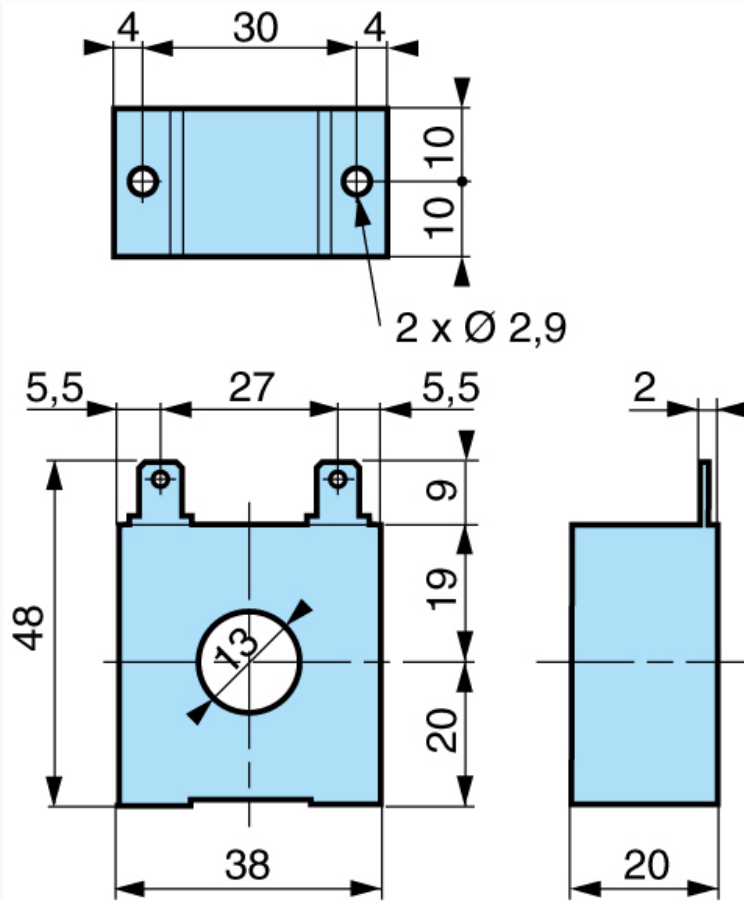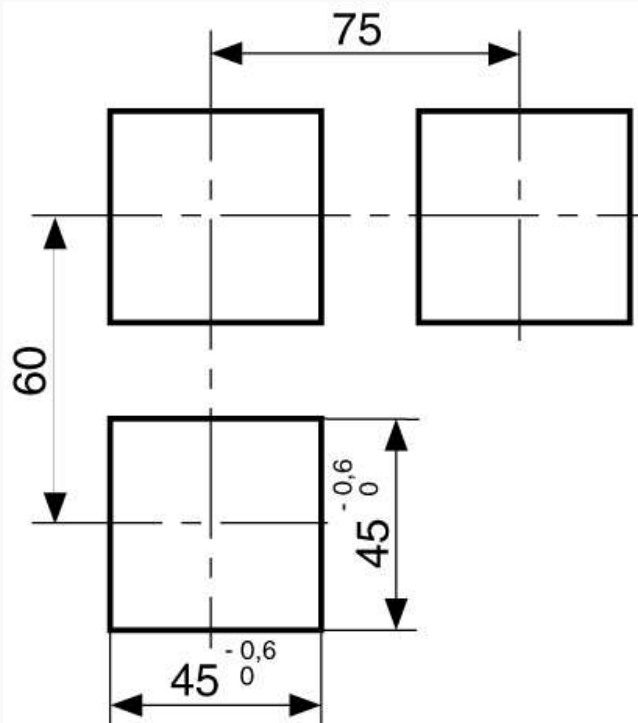| Accessories	Code
Current transformers 10 A / 50 mA	26 852 301
Current transformers 25 A / 50 mA	26 852 302
Current transformers 50 A / 50 mA	26 852 303
Current transformers for EIT 100 A / 50 mA	26 852 304

Dimensions (mm)

MIC 48
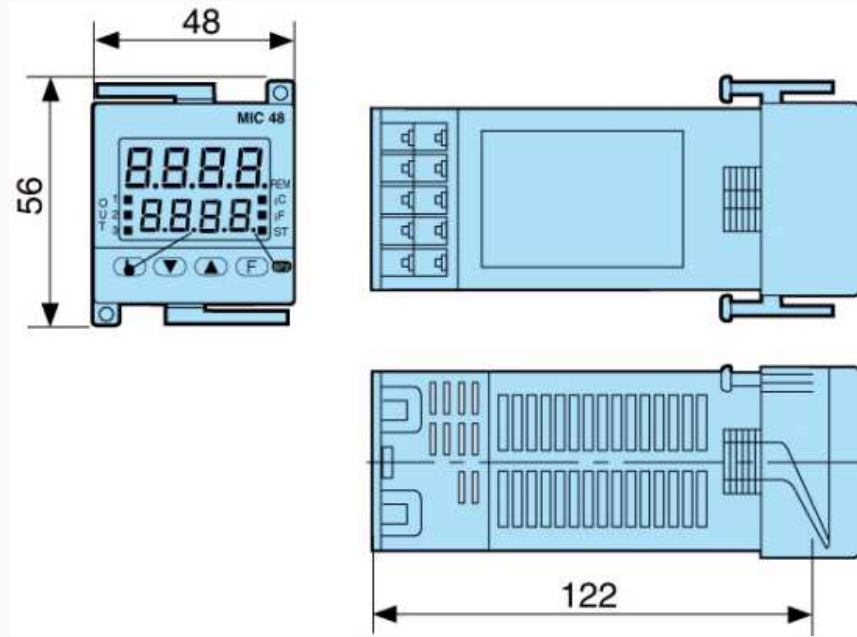
Dimensions (mm)

Current transformer
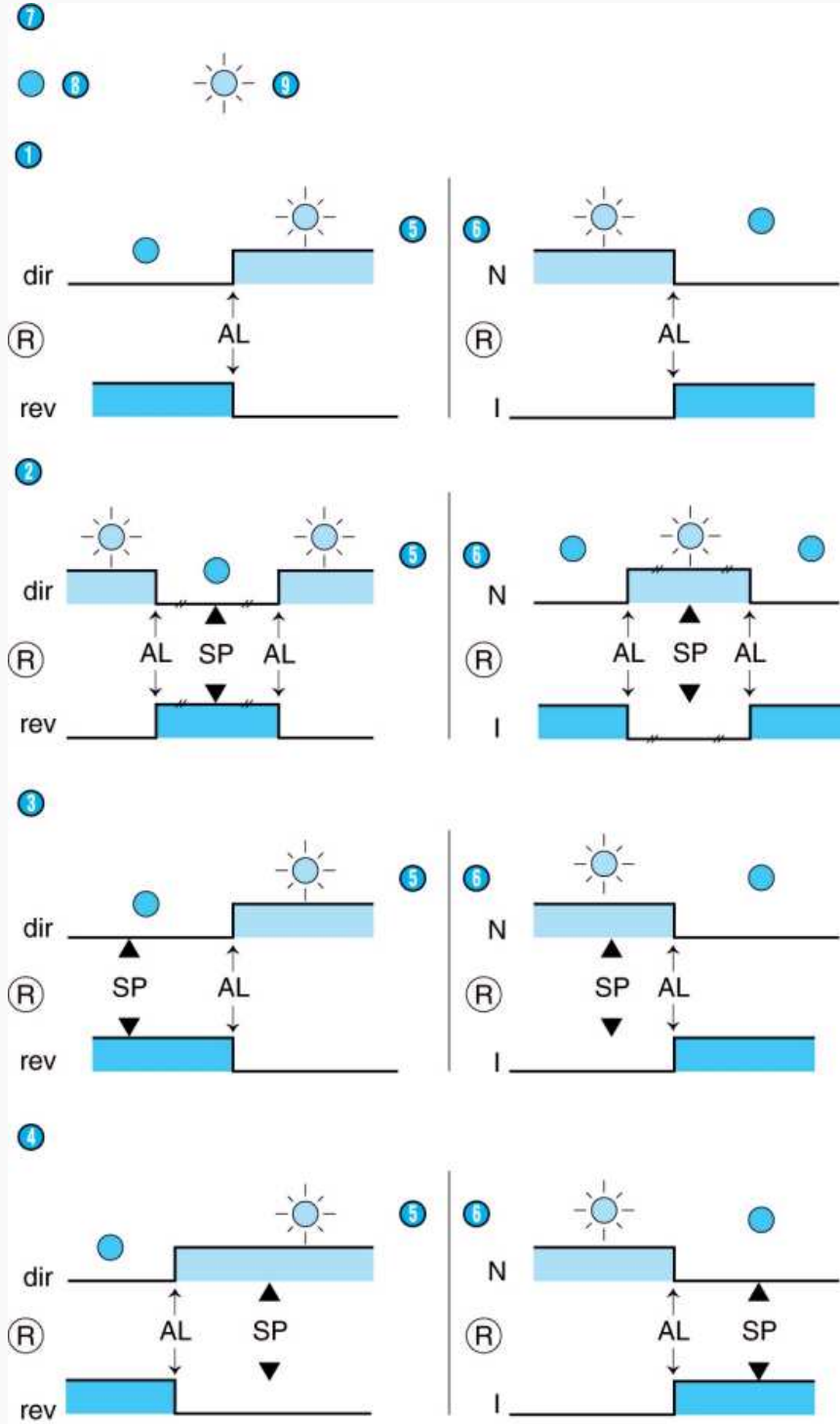
Current transformers

Dimensions (mm)
Panel cut-out

Panel cut-out

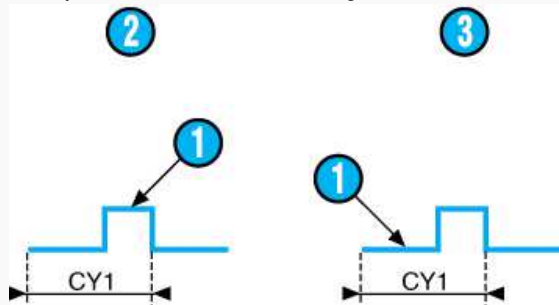**Curves**
Operating modes
Summary of the various configurations

Nº	Legend
❶	absolute alarm
❷	band alarm
❸	positive deviation alarm
❹	negative deviation alarm
❺	high
❻	low
❼	Alarm display LED
❽	LED off
❾	LED on

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Curves

Description of the load break monitoring alarm

Operating mode The measurement is executed on each cycle CY1 of the main output OUT1

Nº	Legend
①	Measurement
②	OUT 1 N/O type
③	OUT 1 N/C type

Curves
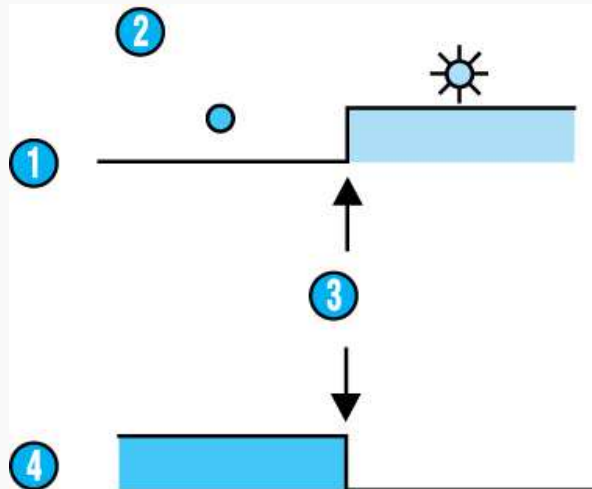
Behaviour of output OUT 3

Nº	Legend
①	Dir
②	Low level alarm
③	Threshold in A
④	Rev

Connections

Relay output

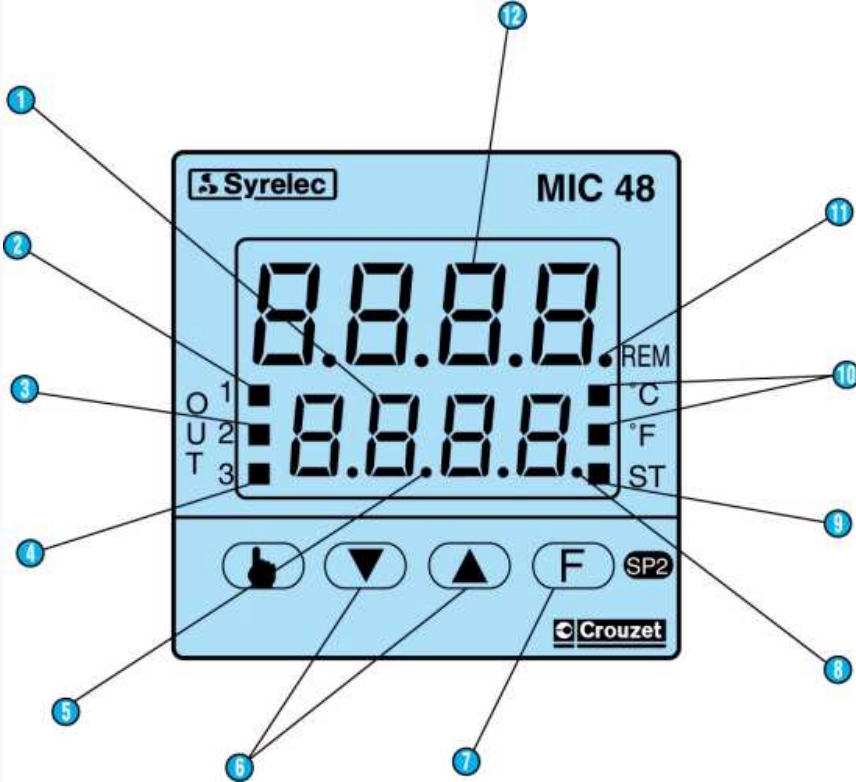| Nº	Legend
❶	250 V AC / 2A resistive
❷	Supply
❸	Linear
❹	Main output 250 V AC / 3 A resistive
	11-12-13 : Serial link
	14-15 : Input 50 mA AC (Current transformer connected for load break monitoring or selection of 2nd setpoint)

Connections

Logic output

Nº	Legend

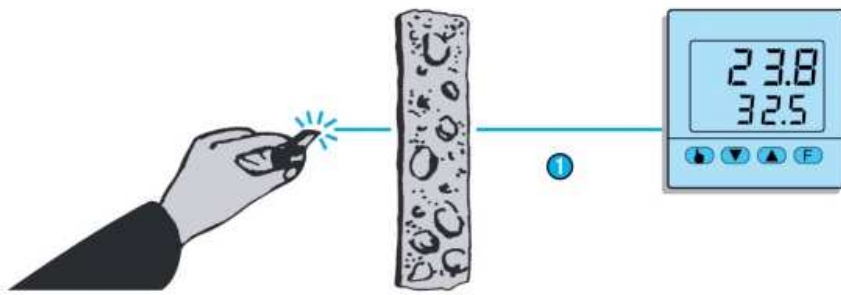|	
❶	250 V AC / 2A resistive
❷	Supply
❸	Linear
❹	Main output 250 V AC / 3 A resistive
	11-12-13 : Serial link
	14-15 : Input 50 mA AC (Current transformer connected for load break monitoring or selection of 2nd setpoint)

Applications
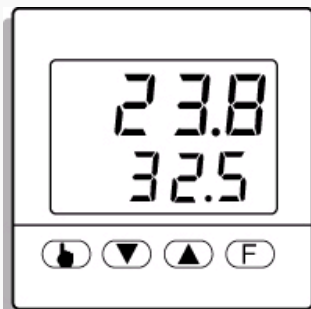
Display

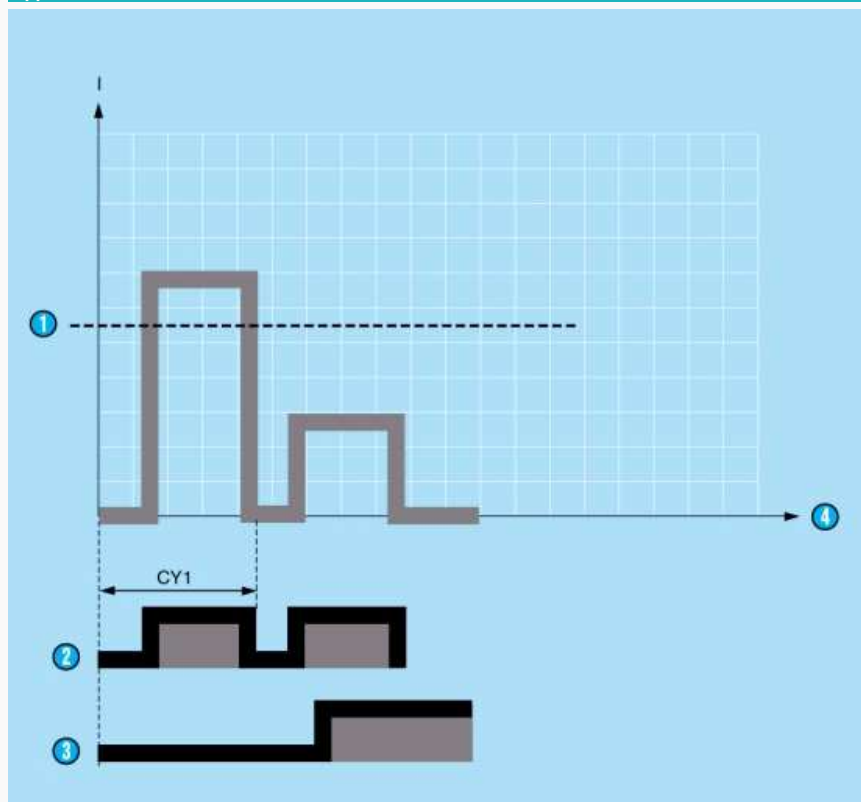| Nº	Legend
❶	Lower display : - setpoint - output power - heating element consumption (in amps) - abbreviation of the parameter selected during programming
❷	Main output status LED, lit when the output is active.
❸	Cool output or alarm 1 output status LED, lit when the output is active
❹	Load break alarm output and/or alarm output 2 status LED, lit when the output is active
❺	Manual/automatic operation. The LED flashes when the controller is in manual mode
❻	Parameter modification and direct access to the setpoint
❼	Parameter selection and validation in configuration and parameter definition modes. This key is also used to display the output power and the heating element consumption
❽	SP2 LED flashes slowly when control occurs at setpoint SP2. SP2 LED flashes rapidly when the setpoint value is programmed via the RS485 serial link
❾	LED indicating the SMART function
❿	When the sensor input is connected to a thermocouple or a Pt100, the LED corresponding to the selected unit of measurement is lit
⓫	REM LED on when the controller is communicating via the RS485 serial link
⓬	Upper display : -measurement -parameter values during programming

Applications

Applications

Applications

Applications