



MIC48 Without RS 485 link Part number 89422018



- 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

	Type	Output	Voltages
89422008	Without RS 485 link	Relay	100 to 240 VAC
89422018	Without RS 485 link	Logic	-
89422002	Without RS 485 link	Relay	24 VACDC
89422012	Without RS 485 link	Logic	-
89422408	With RS 485 link	Relay	100 to 240 VAC
89422418	With RS 485 link	Logic	-
89422402	With RS 485 link	Relay	24 VACDC
89422412	With RS 485 link	Logic	-

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 °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 range RTD 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
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
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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

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

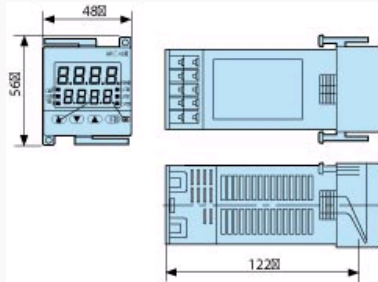
Accessories

Current transformers 10 A / 50 mA

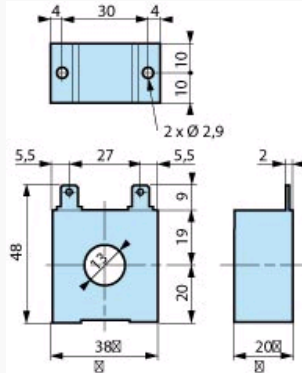
Code

26852301

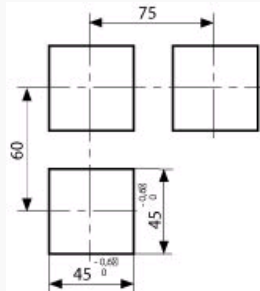
Dimension Diagram : MIC 48



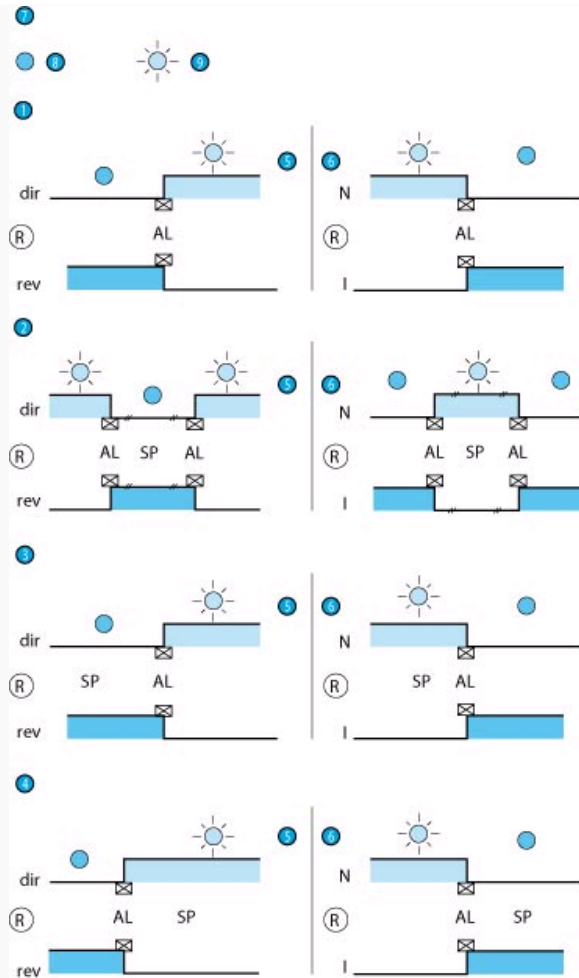
Dimension Diagram : Current transformer



Dimension Diagram : Panel cut-out

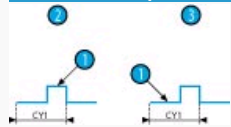


Curves : Operating modes Summary of the various configurations



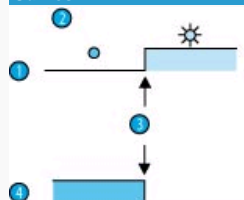
N°	Legend
1	absolute alarm
2	band alarm
3	positive deviation alarm
4	negative deviation alarm
5	high
6	low
7	Alarm display LED
8	LED off
9	LED on

Curves : Description of the load break monitoring alarm



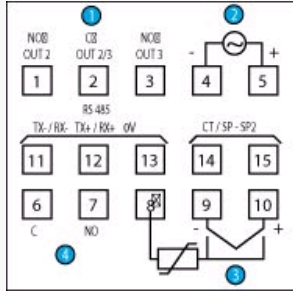
N°	Legend
1	Measurement
2	OUT 1 N/O type
3	OUT 1 N/C type

Curves :



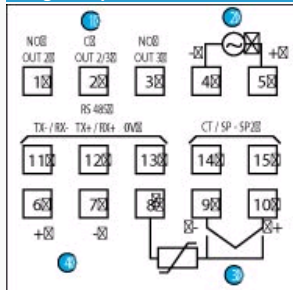
N°	Legend
1	Dir
2	Low level alarm
3	Threshold in A
4	Rev

Relay output



N°	Legend
1	250 V AC / 2A resistive
2	Supply
3	Linear
4	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 2 nd setpoint)

Logic output



N°	Legend
1	250 V AC / 2A resistive
2	Supply
3	Linear
4	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 2 nd setpoint)