Zelio® Measurement and Control Relays
REG Temperature Controllers

Size (mm) - Standard		**24 x 48 – 1/32 DIN**

Inputs		Thermocouple PT 100 probe - Voltage/current, depending on model
Sampling TIme		500 ms
Communication on Modbus® bus		Yes, except for **REG24PTP1A●HU**
Dust and Watertight Front Panel	IP66 (conforming to NEMA 4X)	Yes
Functions	Hysteresis	Yes
	PID	Yes
	Auto-tuning	Yes
	Fuzzy logic	Yes
	Ramps	8 steps
	Controlled start-up	No
	Operating mode	Automatic
Alarm Outputs		1 on **REG24PTP1A●HU** only
Display	7 segment LED, 4 digits	1
	Operating indicators	4
Process Outputs (number - type)	1 relay	■
	2 relays	—
	1 solid state relay interface	■
	1 relay + 1 solid state relay interface	—
	1 current (4-20 mA)	■
	1 solid state relay interface + 1 current (4-20 mA)	—
Supply Voltage	∼ 100…240 V	**REG24P●●●●HU**
	⎓ 24 V	**REG24P●●●●LU**
Temperature Controller		**REG 24**
Page		14

Zelio® Measurement and Control Relays
REG Temperature Controllers

Size (mm) - Standard		48 x 48 – 1/16 DIN	96 x 48 – 1/8 DIN
			
Inputs		Universal (Thermocouple, PT100, Voltage: 1-5 Vdc, 0-5 Vdc, 0-10 Vdc, 2-10 Vdc, 0-100 mVdc, Current: 0-20 mA, 4-20 mA)	Universal (Thermocouple, PT100, Voltage: 1-5 Vdc, 0-5 Vdc, 0-10 Vdc, 2-10Vdc, 0-100 mVdc, Current: 0-20 mA, 4-20 mA)
Sampling TIme		200 ms	200 ms
Communication on Modbus® bus		Yes, except for **REG 48PUNL1●HU**	Yes, except for **REG96PUNL1●HU**
Dust and Watertight Front Panel	IP66 (conforming to NEMA 4X)	Yes	Yes
Functions	Hysteresis	Yes	Yes
	PID	Yes	Yes
	Auto-tuning	Yes	Yes
	Fuzzy logic	Yes	Yes
	Ramps	16 steps	16 steps
	Controlled start-up	Yes	Yes
	Operating mode	Automatic and manual	Automatic and manual
Alarm Outputs		2	3
Display	7 segment LED, 4 digits	2, red and green, configurable	2, red and green, configurable
	Operating indicators	5	6
Process Outputs (number - type)	1 relay	■	■
	2 relays	■	■
	1 solid state relay interface	■	■
	1 relay + 1 solid state relay interface	■	■
	1 current (4-20 mA)	■	■
	1 solid state relay interface + 1 current (4-20 mA)	■	■
Supply Voltage	∿ 100…240 V	**REG48PUN●●HU**	**REG96PUN●●HU**
	⎓ 24 V	**REG48PUN●●LU**	**REG96PUN●●LU**
Temperature Controller		**REG 48**	**REG 96**
Page		14	14

Zelio® Measurement and Control Relays
REG Temperature Controllers

24 x 48 mm size

48 x 48 mm size

96 x 48 mm size

Zelio Control Soft software available free of charge from www.schneider-electric.us

Introduction

Product

The range of **REG** temperature controllers provides a solution with 3 product sizes (DIN standard):
- □ 24 x 48 mm (1/32 DIN)
- □ 48 x 48 mm (1/16 DIN)
- □ 96 x 48 mm (1/8 DIN)

The range includes 40 models which offer the following characteristics (depending on model):
- ■ Supply voltage ∿ 100...240 V or ⎓ 24 V
- ■ Input: Thermocouple, PT 100 probe
- ■ Voltage/current: depending on model
- ■ Configurable display: red and green display colors and possibility of flashing display in the event of an alarm
- ■ 1, 2 or 3 alarm outputs, depending on model
- ■ Advanced functions, depending on model

Operation

- ■ One or two dedicated outputs for heating, cooling, or heating/cooling of processes based on PID algorithms
- ■ Advanced functions:
  - □ ramps
  - □ fuzzy logic to avoid over/under temperature
  - □ auto-tuning
  - □ controlled start-up, depending on model
  - □ automatic or manual operating mode, depending on model

Applications

REG temperature controllers are designed for system integrators and machine manufacturers. They provide a solution for temperature control in the following applications: industrial machines, HVAC, packaging, and textile industry.

Application examples:
- ■ Boilers and furnaces
- ■ Extrusion lines
- ■ Plastic and rubber injection presses
- ■ Thermo-forming
- ■ Production of synthetic fibers and polymerization
- ■ Food and drink processing lines
- ■ Molding presses
- ■ Environmental test chambers, overhead furnaces, and test benches
- ■ UV and laser technologies
- ■ Maintaining the temperature of a color bath
- ■ Cold rooms
- ■ Paint booths
- ■ Horticultural and livestock farms

Software Configuration

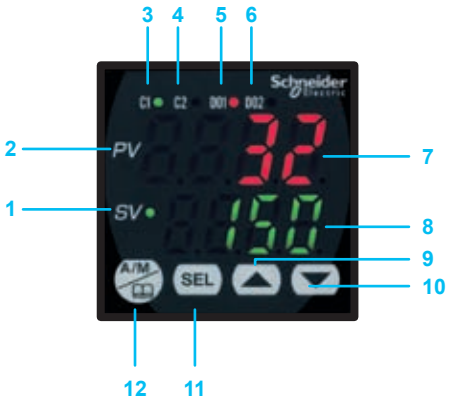
Zelio Control Soft software is used to configure the parameter settings of **REG** temperature controllers (except for REG24PTP1A●HU).
- ■ This software is available free of charge and can be downloaded from www.schneider-electric.us
- ■ It runs on a PC, with a Windows 98, XP, or Vista operating system
- ■ It allows modification of parameter settings, saving, and downloading of configurations

Zelio® Measurement and Control Relays
REG Temperature Controllers

Description

24 x 48 size – 1/32 DIN standard

1 C1: indicator showing output 1 ON
2 SV: set-point value indicator; ON = SV, OFF = PV present value indicator, if parameter entry
3 SEL: selector button
4 Display of parameter value entered, 4 red digits, 10 mm (0.39 in) high
5 UP (increment) arrow
6 DOWN (decrement) arrow
7 AL1: relay output alarm on REG24PTP1A●HU only
8 AL2: Modbus® communication alarm



48 x 48 size – 1/16 DIN standard

1 SV: set-point value indicator
2 PV: present value indicator
3 C1: indicator showing output 1 ON
4 C2: indicator showing output 2 ON
5 D01: Alarm 1 output ON
6 D02: Alarm 2 output ON
7 Display of process value, 4 red digits, 12 mm (0.47 in) high
8 Display of parameter value entered, 4 green digits, 10 mm (0.39 in) high
9 UP (increment) arrow
10 DOWN (decrement) arrow
11 SEL: selector button
12 A/M: automatic/manual mode or configuration key

96 x 48 size – 1/8 DIN standard

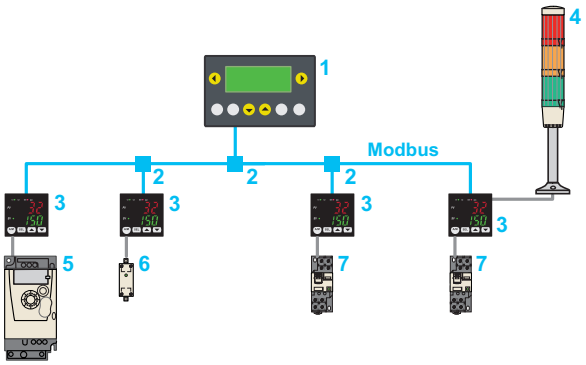
1 SV: set-point value indicator
2 PV: present value indicator
3 C1: indicator showing output 1 ON
4 C2: indicator showing, output 2 ON
5 D01: Alarm 1 output ON
6 D02: Alarm 2 output ON
7 D03: Alarm 3 output ON
8 Display of process value, 4 red digits, 12 mm (0.47 in) high
9 Display of parameter value entered, 4 green digits, 10 mm (0.39 in) high
10 UP (increment) arrow
11 DOWN (decrement) arrow
12 A/M: automatic/manual mode or configuration key
13 SEL: selector button

Zelio® Measurement and Control Relays
REG Temperature Controllers

Examples of Architectures with Communication Over a Modbus® Serial Port

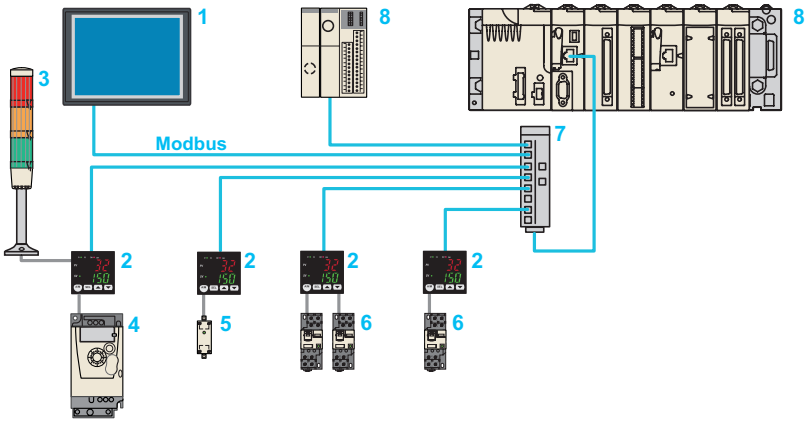
Temperature controllers **REG 24**, **REG 48** and **REG 96** *(1)* have a communication port for data exchange and parameter entry on the Modbus® bus.
These temperature controllers can be incorporated in intelligent architectures supervised by Magelis® terminals or controlled by PLCs (Twido®, M340™ or Premium™) for the exchange and transmission of data such as set-point values, present values, and alarms.

REG Temperature Controllers Supervised by a Magelis Compact Terminal



1 Compact terminal **XBT N**, master on the Modbus communication network
2 Junction box **TWDXCATR3RJ**
3 Temperature controllers **REG24/48/96**
4 Alarm: illuminated indicating banks **XVC** *(2)*
5 Current output: variable speed drive **ATV12H075M2** *(3)*
6 Solid state relay interface output **SSR**
7 Electromechanical relay output **RXM2AB2●●**

REG Temperature Controllers Controlled by PLCs



1 Graphic terminal **XBTG**, slave on the Modbus communication network, for regular reading of values, recording of curves (ramps), and changes in presets
2 Temperature controllers **REG 24/48/96**
3 Alarm: illuminated indicating banks **XVC** *(2)*
4 Current output: variable speed drive **ATV12H075M2** *(3)*
5 **SSR** solid state relay interface output
6 **RXM2AB2●●** electromechanical relay output
7 Modbus hub **LU9GC3**
8 PLCs with sequential processing of instructions: Twido programmable controller or Modicon® M340™ automation platform, or masters on the Modbus communication network

*(1) Except on **REG24PTP1A●HU**, **REG48PUNL1●HU** and **REG96PUNL1●HU**.*
*(2) Illuminated indicating banks **XVC**, preassembled and pre-wired with a buzzer incorporated in the base. Please see our "Control and Signaling Components" catalog.*
*(3) Variable speed drive **ATV12H075M2**: frequency converter for 3-phase asynchronous motors, 200…240 V from 0.18 kW to 4 kW.*

Zelio® Measurement and Control Relays
REG Temperature Controllers

Environment characteristics					
Size (mm) - Standard			**24 x 48 - 1/32 DIN**	**48 x 48 - 1/16 DIN**	**96 x 48 - 1/8 DIN**
Conforming to Standards			EMC EN 61326-1, LVD EN 61010-1		
Product Certifications			cURus (873), CSA C22.2 n° 24-93, Gost		
Product Marking			CE		
Ambient Air Temperature Around the Device	Operation	**°C (°F)**	- 10…+ 50 (+ 1 4…+ 122)		
	Storage	**°C (°F)**	- 20…+ 60 (- 4…+ 140)		
Relative Humidity			90% without condensation		
Altitude	Operation	**m**	2000		
	Storage	**m**	3000		
Vibration Resistance			1 gn (10…70 Hz)		
Shock Resistance			5 gn		
Input Type	PT100 probe		Yes	Yes	Yes
	Thermocouple J, K, R, B, S, T, E, N, PLII		Yes	Yes	Yes
	Voltage/current	**V**	1…5	0…5, 1…5, 0…10, 2…10, 0…0.1	
		mA	4…20	0…20, 4…20	
Precision of Information Displayed		**%FS**	0.5	0.3	0.3
Number of Process Outputs			1	1 or 2	1 or 2
Sampling Time		**ms**	500	200	200
Max. Number of Recording Operations to Memory (EEPROM)			100,000	100,000	100,000
Power Supply					
Voltage Range	~ 100…240 V	**V**	85…264		
	⎓ 24 V	**V**	21.6…26.4		
Power Consumption	~ 100…240 V	**VA**	6 for 100 V 8 for 240 V	12	12
	⎓ 24 V	**VA**	8	12	12
Communication on Modbus® Bus					
Serial Port	Number and type		1 x RS-485		
Flow Rate		**K bits/s**	9600 and 19,200		
Isolation Between Internal Circuit and Serial Port			Non isolated		
Communication Protocol			Modbus slave RTU, half duplex		
Built-in Functions					
Hysteresis			Yes	Yes	Yes
PID			Yes	Yes	Yes
Auto-tuning			Yes	Yes	Yes
Fuzzy Logic			Yes	Yes	Yes
Ramps		**Steps**	8	16	16
Controlled Start-up			No	Yes	Yes
Operating Mode			Automatic	Automatic and manual	Automatic and manual
Output Characteristics					
Relays			SPDT ~ 220 V, ⎓ 30 V / 3 A	SPST ~ 220 V, ⎓ 30 V / 3 A	
Solid State Relay Interface			⎓ 24 V, 20 mA, 850 Ω		
Current			4…20 mA, load resistance 600 Ω max		
Alarm Outputs	SPDT	**~ V**	100…220, load capacity 1 A	100…220, load capacity 3 A	
		⎓ V	30, load capacity 1 A	30, load capacity 3 A	

Zelio® Measurement and Control Relays
REG Temperature Controllers

REG24PTP1●●●●
REG24PUJ1 ●●●

REG48PUN●●●●●

REG96PUN●●●●●

Temperature Controllers

24 x 48 size – 1/32 DIN standard

Input type	Supply Voltage	Number and type of outputs	Alarm	Communication on Modbus® Bus	Catalog Number	Weight kg (lb)
Thermocouple PT100 Probe	**~ 100/240 V**	1 relay	No	Yes	**REG24PTP1RHU**	0.200 (0.44)
		1 relay	1	No	**REG24PTP1ARHU**	0.200 (0.44)
		1 solid state relay interface	No	Yes	**REG24PTP1LHU**	0.200 (0.44)
		1 solid state relay interface	1	No	**REG24PTP1ALHU**	0.200 (0.44)
		1 current (4-20 mA)	No	Yes	**REG24PTP1JHU**	0.200 (0.44)
	⎓ 24 V	1 relay	No	Yes	**REG24PTP1RLU**	0.200 (0.44)
		1 solid state relay interface	No	Yes	**REG24PTP1LLU**	0.200 (0.44)
		1 current (4-20 mA)	No	Yes	**REG24PTP1JLU**	0.200 (0.44)
Voltage/Current	**~ 100/240 V**	1 relay	No	Yes	**REG24PUJ1RHU**	0.200 (0.44)
		1 solid state relay interface	No	Yes	**REG24PUJ1LHU**	0.200 (0.44)
	⎓ 24 V	1 relay	No	Yes	**REG24PUJ1RLU**	0.200 (0.44)
		1 solid state relay interface	No	Yes	**REG24PUJ1LLU**	0.200 (0.44)

48 x 48 size – 1/16 DIN standard

Input type	Supply Voltage	Number and type of outputs	Alarm	Communication on Modbus® Bus	Catalog Number	Weight kg (lb)
Universal	**~ 100/240 V**	1 relay	2	Yes	**REG48PUN1RHU**	0.300 (0.66)
				No	**REG48PUNL1RHU**	0.300 (0.66)
		2 relays	2	Yes	**REG48PUN2RHU**	0.300 (0.66)
		1 solid state relay interface	2	Yes	**REG48PUN1LHU**	0.300 (0.66)
				No	**REG48PUNL1LHU**	0.300 (0.66)
		1 solid state relay interface + 1 relay	2	Yes	**REG48PUN2LRHU**	0.300 (0.66)
		1 current (4-20 mA)	2	Yes	**REG48PUN1JHU**	0.300 (0.66)
		1 solid state relay interface + 1 current (4-20 mA)	2	Yes	**REG48PUN2LJHU**	0.300 (0.66)
	⎓ 24 V	1 relay	2	Yes	**REG48PUN1RLU**	0.300 (0.66)
		2 relays	2	Yes	**REG48PUN2RLU**	0.300 (0.66)
		1 solid state relay interface	2	Yes	**REG48PUN1LLU**	0.300 (0.66)
		1 solid state relay interface + 1 relay	2	Yes	**REG48PUN2LRLU**	0.300 (0.66)
		1 current (4-20 mA)	2	Yes	**REG48PUN1JLU**	0.300 (0.66)
		1 solid state relay interface + 1 current (4-20 mA)	2	Yes	**REG48PUN2LJLU**	0.300 (0.66)

96 x 48 size – 1/8 DIN standard

Input type	Supply Voltage	Number and type of outputs	Alarm	Communication on Modbus® Bus	Catalog Number	Weight kg (lb)
Universal	**~ 100/240 V**	1 relay	3	Yes	**REG96PUN1RHU**	0.300 (0.66)
				No	**REG96PUNL1RHU**	0.300 (0.66)
		2 relays	3	Yes	**REG96PUN2RHU**	0.300 (0.66)
		1 solid state relay interface	3	Yes	**REG96PUN1LHU**	0.300 (0.66)
				No	**REG96PUNL1LHU**	0.300 (0.66)
		1 solid state relay interface + 1 relay	3	Yes	**REG96PUN2LRHU**	0.300 (0.66)
		1 current (4-20 mA)	3	Yes	**REG96PUN1JHU**	0.300 (0.66)
		1 solid state relay interface + 1 current (4-20 mA)	3	Yes	**REG96PUN2LJHU**	0.300 (0.66)
	⎓ 24 V	1 relay	3	Yes	**REG96PUN1RLU**	0.300 (0.66)
		2 relays	3	Yes	**REG96PUN2RLU**	0.300 (0.66)
		1 solid state relay interface	3	Yes	**REG96PUN1LLU**	0.300 (0.66)
		1 solid state relay interface + 1 relay	3	Yes	**REG96PUN2LRLU**	0.300 (0.66)
		1 current (4-20 mA)	3	Yes	**REG96PUN1JLU**	0.300 (0.66)
		1 solid state relay interface + 1 current (4-20 mA)	3	Yes	**REG96PUN2LJLU**	0.300 (0.66)

Zelio® Measurement and Control Relays
REG Temperature Controllers

Accessories for Temperature Controllers (1)

Description	For use with Temperature Controller Size	Sold in Lots of	Catalog Number	Weight g (oz)
Bracket for Mounting on ⊥ Rail	24 x 48	4	REG24PSOC	14.93 (0.53)
Terminal Block Cover	48 x 48	2	REG48PCOV	7.77 (0.27)
	96 x 48	2	REG96PCOV	13.17 (0.46)

Miniature Plug-in Relays with Lockable Test Button and LED

RXM2AB2●●

2 C/O Contacts - Thermal Current (Ith): 12 A

Control Circuit Voltage	Sold in Lots of	Catalog Number	Weight
V			kg (lb)
⎓ 12	10	RXM2AB2JD	0.037 (0.08)
⎓ 24	10	RXM2AB2BD	0.037 (0.08)
⎓ 48	10	RXM2AB2ED	0.037 (0.08)
⎓ 110	10	RXM2AB2FD	0.037 (0.08)
∿ 24	10	RXM2AB2B7	0.037 (0.08)
∿ 48	10	RXM2AB2E7	0.037 (0.08)
∿ 120	10	RXM2AB2F7	0.037 (0.08)
∿ 230	10	RXM2AB2P7	0.037 (0.08)

Solid State Relays with 1 N/O Contact, for mounting on ⊥ rail

SSRDCDS10A1

For more information, please consult our *Electromechanical and Solid-State Zelio Relays* Catalog , Part Number: DIA3ED2090304EN-US

Switching	Voltage Range		Load Current (A)	Catalog Number	Weight kg (lb)
	Input (V)	Output (V)			
SCR output					
Zero Voltage	⎓ 4…32	∿ 24…280	10	SSRDCDS10A1	0.272 (0.60)
			20	SSRDCDS20A1	0.272 (0.60)
			30	SSRDCDS30A1	0.272 (0.60)
			45	SSRDCDS45A1	0.482 (1.06)

Altivar® 12 Variable Speed Drives with Heat Sink

ATV12H075M2

For more information, please consult our *Altivar® 12 Variable Speed Drives* **catalog**

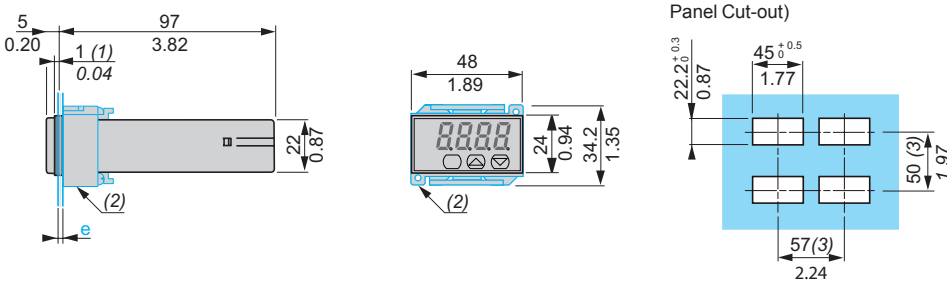
Motor		Network				Altivar 12				
Power Indicated on Rating Plate		Maximum Line Current		Apparent Power	Pro-spective Maximum Line Isc	Maximum Continuous Output Current (In)	Maximum Transient Current for 60 s	Power Dissipated at Maximum Output Current (In)	Catalog Number	Weight
		at U1	at U2	at U2		at U2				
kW	*HP*	A	A	kVA	kA	A	A	W		kg (lb)
Single-phase Supply Voltage: 100…120 V 50/60 Hz										
0.75	*1*	18.9	15.7	3.3	1	4.2	6.3	48	ATV12H075M2	1.300 (2.87)
Single-phase Supply Voltage: 200…240 V 50/60 Hz										
0.75	*1*	10.2	8.5	3.5	1	4.2	6.3	44	ATV12H075M2	0.800 (1.76)
3-phase Supply Voltage: 200…240 V 50/60 Hz										
0.75	*1*	6.3	5.3	2.2	5	4.2	6.3	41	ATV12H075M3	0.800 (1.76)

(1) To be ordered separately.

Zelio® Measurement and Control Relays
REG Temperature Controllers

24 x 48 size– 1/32 DIN standard

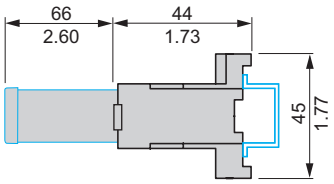
Panel Mounting (bracket supplied)



Dimensions $\frac{mm}{in.}$

n: number of devices mounted side-by-side

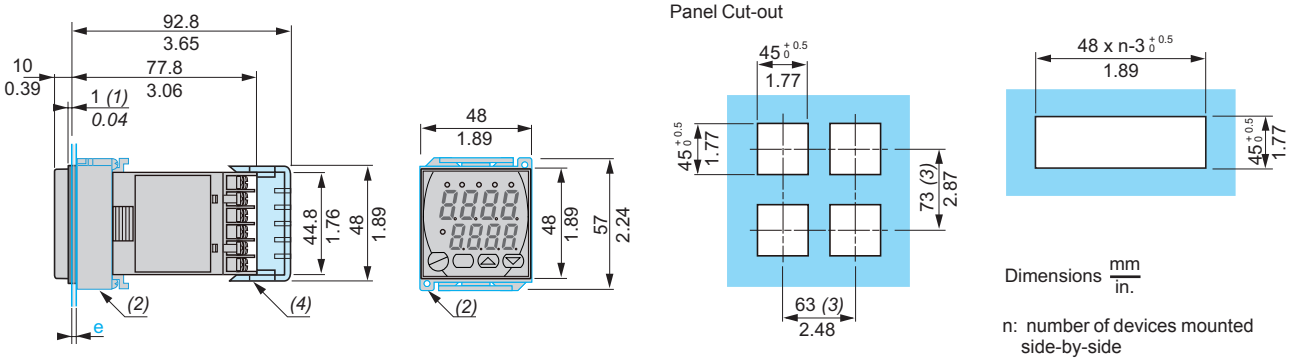
Mounting on ⊔ Rail with Accessory REG24PSOC (to be ordered separately, see page 15)



Dimensions $\frac{mm}{in.}$

48 x 48 size – 1/16 DIN standard

Panel Mounting (bracket supplied)

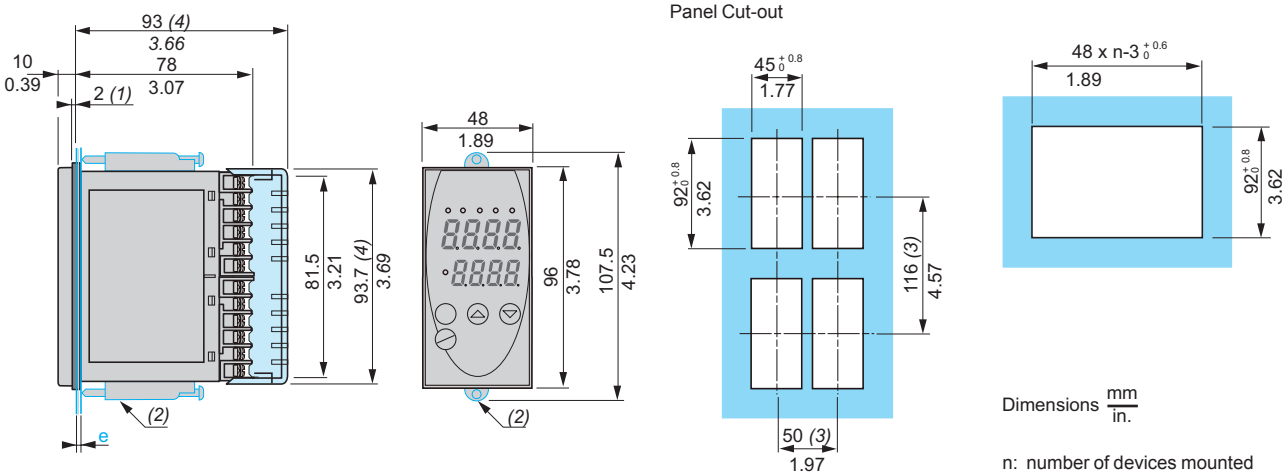


Dimensions $\frac{mm}{in.}$

n: number of devices mounted side-by-side

96 x 48 – 1/8 DIN standard

Panel Mounting (bracket supplied)



Dimensions $\frac{mm}{in.}$

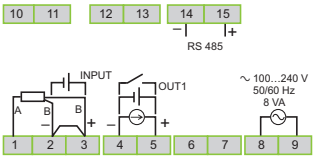
n: number of devices mounted side-by-side

e: panel thickness
(1) Seal.
*(2) Mounting brackets supplied with **REG** temperature controllers.*
(3) Minimum value.
(4) Terminal block cover, to be ordered separately, see page 15.

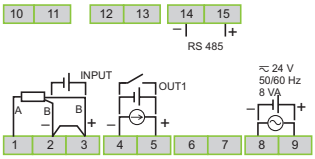
Zelio® Measurement and Control Relays
REG Temperature Controllers

REG 24

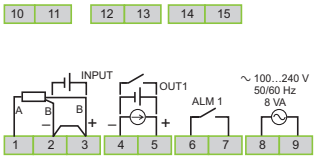
REG24PTP1RHU, REG24PUJ1RHU, REG24PTP1LHU, REG24PUJ1LHU, REG24PTP1JHU



REG24PTP1RLU, REG24PUJ1RLU, REG24PTP1LLU, REG24PUJ1LLU, REG24PTP1JLU,

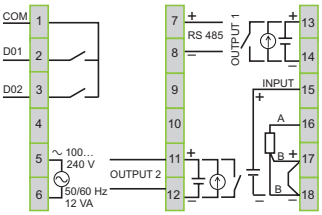


REG24PTP1ARHU, REG24PTP1ALHU

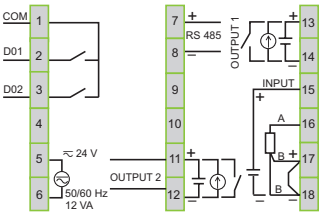


REG 48

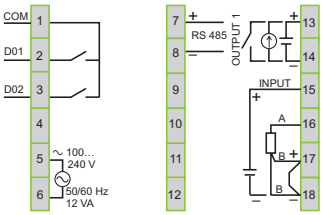
REG48PUN2RHU, REG48PUN2LRHU, REG48PUN2LJHU



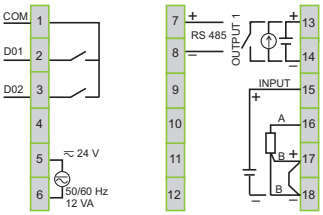
REG48PUN2RLU, REG48PUN2LRLU, REG48PUN2LJLU



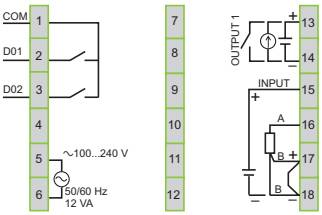
REG48PUN1RHU, REG 48PUN1LHU, REG48PUN1JHU



REG48PUN1RLU, REG48PUN1LLU, REG48PUN1JLU

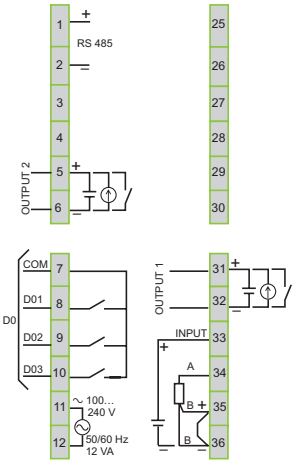


REG 48PUNL1RHU, REG48PUNL1LHU

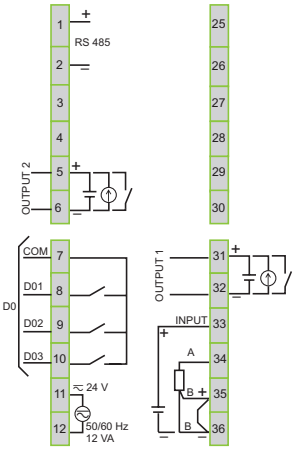


REG 96

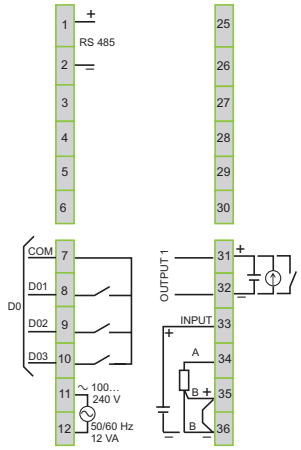
REG96PUN2RHU, REG 96PUN2LRHU, REG96PUN2LJHU



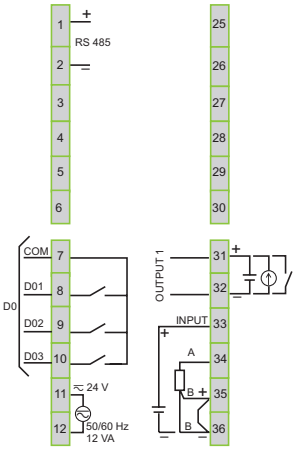
REG96PUN2RLU, REG96PUN2LRLU, REG96PUN2LJLU



REG96PUN1RHU, REG96PUN1LHU, REG96PUN1JHU



REG96PUN1RLU, REG96PUN1LLU, REG96PUN1JLU



REG96PUNL1RHU, REG96PUNL1LHU