APPLICATION:

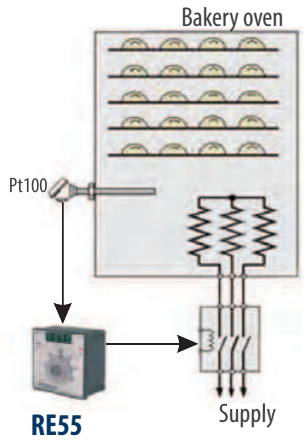
- plastics processing industry (injection moulding machines)
- food industry
- bakery ovens
- drying chambers
- industrial ovens (blast furnaces, kilns, etc.)
- packaging appliances
- to control other measuring quantities converted into standard signals

SELECTED FEATURES:

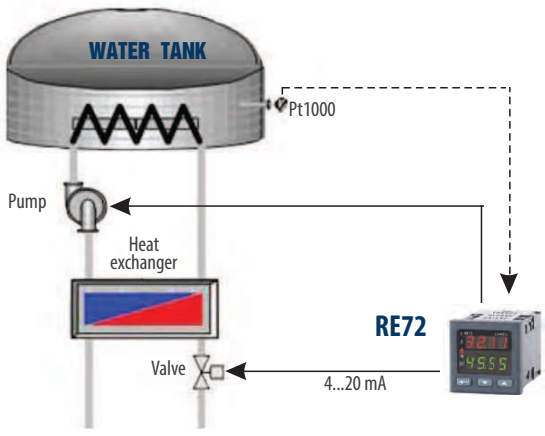
- universal/programmable measuring inputs allow implementing in diverse applications
- easy installation thanks to the function of automatic selection of PID parameters
- smaller overshoot thanks to the setpoint soft start function
- program following control option useful for instance in drying chambers, hardening furnaces and kilns
- bumpless transfer between manual and automatic control
- an installation is protected through the function of switching off the control output in case of measuring sensor damage
- remote control using RS-485 Modbus digital interface, **Ethernet**

APPLICATION EXAMPLES

Bakery oven control



Temperature measurement and control in a water tank



CONTROLLERS

NEW FUNCTIONS!

Type







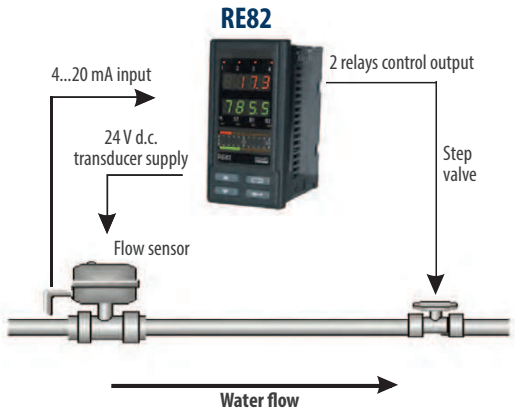

	Industrial process controllers							
	RE22	**RE70**	**RE71**	**RE81**	**RE72**	**RE82**	**RE92**	**RE19**
Number of channels	1	1	1	1	1	1	2	2
Input	programmable Pt100/1000 J, T, K, S, R, B, E, N, L or 0/4...20 mA, 0...5/10 V	programmable Pt100/1000 J, T, K, S, R, B, N	fixed Pt100 J, K, S		programmable Pt100/1000 J, T, K, S, R, B, E, N, L 0/4...20 mA 0...5/10 V		programmable 2 x Pt100/500/1000, Ni100, Cu100 J, T, K, S, R, B, E, N, L 0/4...20 mA 0...5/10 V	programmable 2 x Pt100/500/1000, Ni100, Cu100 J, T, K, S, R, B, E, N, 0/4...20 mA 0...5/10 V
Additional input	-	-	-	-	logic/ current transformer input/ 0/4... 20 mA (option)	2 x logic/ current transformer input/ 0/4...20 mA	3x logic and 0/4...20 mA / 0...5/10 V / potentiometer (100)1000 Ω (option)	2x logic and 0...5/10 V / 0/4...20 mA / potentiometer (100)1000 Ω (option)
Output	relay or logic 0/5 V	relay	relays or logic 0/6 V	2 x relays or 1 x relay + 1 x logic 0/6 V	2 x relays / logic 0/5 V / analog 0/4...20mA / 0...10 V / supplying output 24 V d.c. 30 mA - option	2 x relays and 2 x relays / logic 0/5V / analog 0/4...20 mA / 0...10 V (option) supplying output 24V d.c. 30mA - option	max. 6 x relays / 2 x logic / 2 x analog 0(4)... 20 mA / 0...10 V (option) supplying output 24 V d.c. 30 mA - option	max. 4 x relays / 4 x OC / 2x logic 0/15 V / 2x analog 0/4...20 mA, 0...10 V - option
Interface	-	RS-485 Modbus (only for configuration)	-		RS-485 Modbus		RS-485 Modbus, **Ethernet** - option	RS-485 Modbus - option
Alarm	-	-	-	1	max. 2	max. 3	max. 6	max. 3
Control	on/off or PID with self-tuning, heating or cooling			on/off or PID with self-tuning, heating or cooling, step-by-step	programmed on/off or PID with self-tuning, heating or cooling, step-by-step			
Display	red LED 4 digits (9,2 mm)		red LED 4 digits (7,6 mm)	red and green LED 2 x 4 digits (7,6 mm)		red and green LED 2 x 4 digits (7,6 mm) + 2 bargraphs	colour LCD 3.5" TFT 320 x 240 pixels	red and green LED 2 x 5 digits (10mm) + LCD 2 x 16 characters
Supply voltage	230 or 110 or 24 V a.c.	230 V a.c.			85...253 V a.c./ d.c. or 20...40 V a.c./d.c.		85...253 V a.c./d.c.	85...253 V a.c./d.c. or 18...23 V d.c.
Protection rating	IP40	IP65						IP40
External dimensions	48 x 48 x 93 mm			48 x 96 x 93 mm	48 x 48 x 93 mm	48 x 96 x 93 mm	96 x 96 x 99 mm	96 x 96 x 81 mm
Additional functions	• soft start	-			• soft start • 6 types of alarms • alarm LATCH function • profile control (15 programs with 15 segments in each)		• **parameter logging on SD card** • **FTP server** • profile control (20 programs with 15 segments in each)	• profile control (15 programs with 15 segments in each)



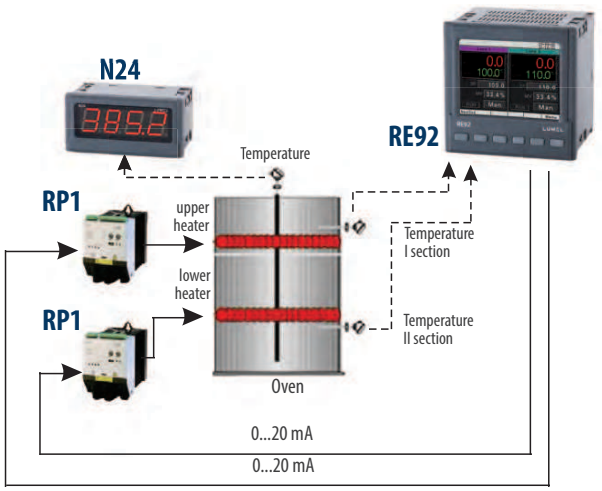

Type	Industrial process controllers			
	RE55	RE60	RE62	RE01
Number of channels	1	1	1	1
Input	fixed Pt100 J, K, S		programmable Pt100 J, K ± 20 mA, ± 10 V, ± 60 mV	fixed Pt100, Pt1000 NTC
Additional input	-		-	logic
Output	2 x relay or 1 x logic 0/5 V + 1 x relay	1 x relay or 1 x logic 0/5 V 1 or 2 x relay - option	max 3 x relay or 2 x relay and1 x analog supply 24 V d.c. - option	2 x relay (1 x NOC 10 A/230 V, 1 x NO 5 A/230 V)
Alarm	1	max 2 - option	max 3	max 2
Control	on/off, PID, heating or cooling	on/off, PID, heating or cooling	on/off, Smart PID	on/off or PID with self-tunig, heating or cooling
Display	green LED 4 digits (10 mm)	LCD (2 x 8 characters)	OLED 128x64 pixel, amber color	red LED 4 digits (14 mm)
Supply voltage	85 .. 253 V d.c./a.c.	24 or 110 or 230 V a.c. or 18...72 V d.c.	22..60 V a.c. / 20..60 V d.c. or 60..253 V a.c. / 60..300 V d.c.	230 V a.c.
Protection rating	IP40		IP30	IP65
External dimensions	96 x 96 x 65 mm	45 x 100 x 120 mm	53 x 110 x 60.5 mm	76 x 34 x 80 mm

APPLICATION EXAMPLES

Water flow measurement and 3-stage valve control



Batch temperature measurement with a smooth heater power control in a hardening furnace



CONNECTION DIAGRAMS

RE22

Fig. 74 View of RE22 controller connection strips

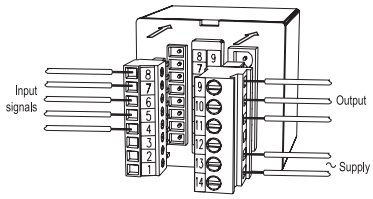
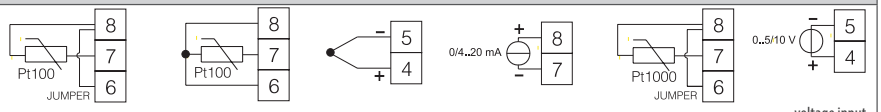


Fig.75 Connection of input signals



resistance thermometer Pt100 in a two-wire system

resistance thermometer Pt100 in a three-wire system

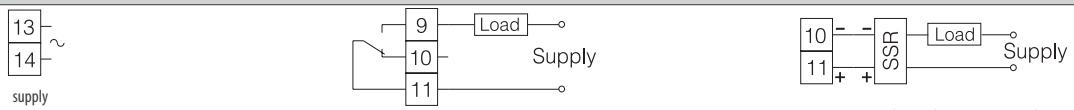
thermocouple

current input 0/4..20 mA

resistance thermometer Pt1000

voltage input 0..5/10 V

Fig. 76 Connection of supply and load circuit



supply

output - relay

output - logic voltage or SSR control

RE70

Fig. 77 View of RE70 controller connection strips

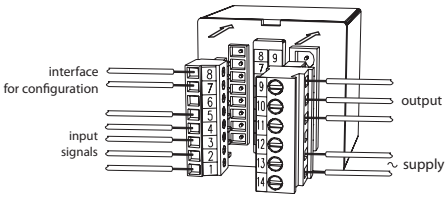
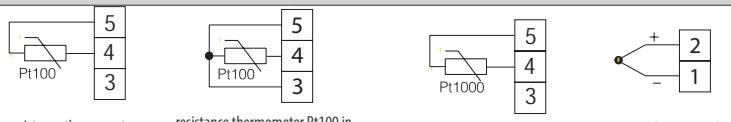


Fig.78 Connection of input signals



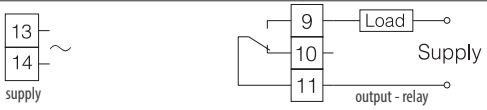
resistance thermometer Pt100 in a two-wire system

resistance thermometer Pt100 in a three-wire system

resistance thermometer Pt1000

thermocouple

Fig. 74 Connection of supply and load circuit



supply

output - relay

Fig. 75 Interface RS-485 (only for configuration)

RE71

Fig. 79 View of RE71 controller connection strips

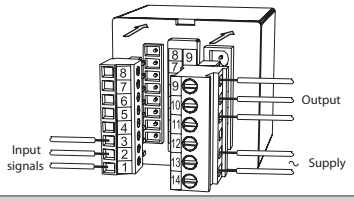
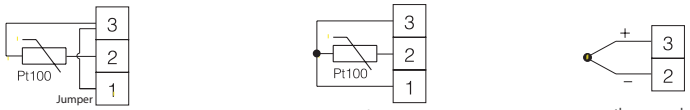


Fig.80 Connections of input signals



resistance thermometer Pt100 in a two-wire system

resistance thermometer Pt100 in a three-wire system

thermocouple

Fig.81 Connection of supply and load circuit

supply

output - relay

output - logic voltage or SSR control

RE81

Fig. 82 View of RE81 controller connection strips

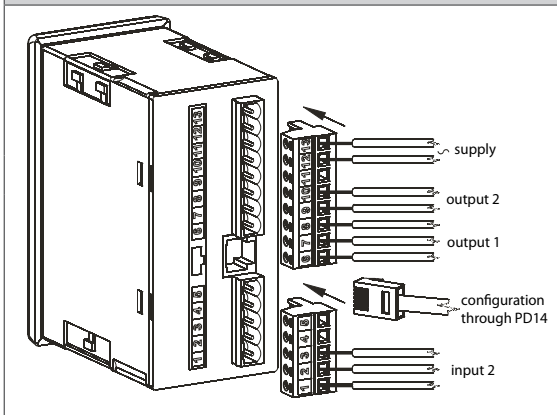
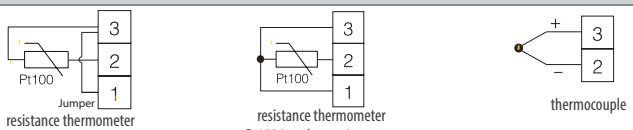


Fig.83 Connections of input signals

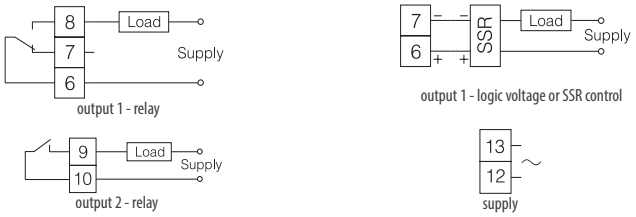


resistance thermometer Pt100 in a two-wire system

resistance thermometer Pt100 in a three-wire system

thermocouple

Fig.84 Connection of supply and load circuit



output 1 - relay

output 1 - logic voltage or SSR control

output 2 - relay

supply

LUMEL EVERYTHING COUNTS

RE72

Fig. 85 View of RE72 controller connection strips

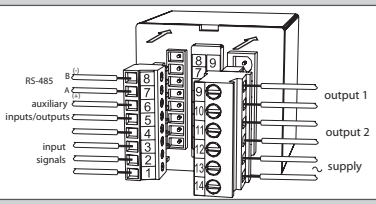


Fig.86 Connection of input signals

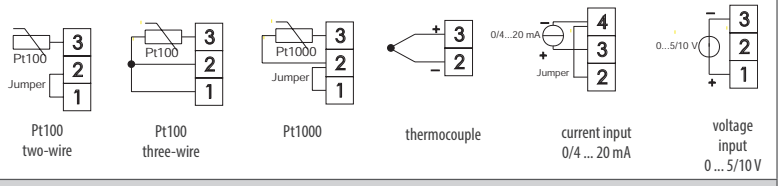


Fig.87 Optional connections

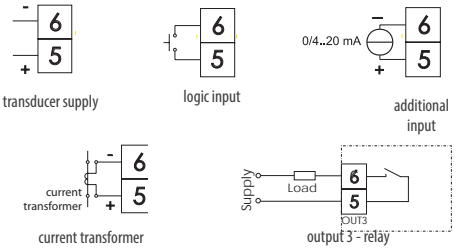
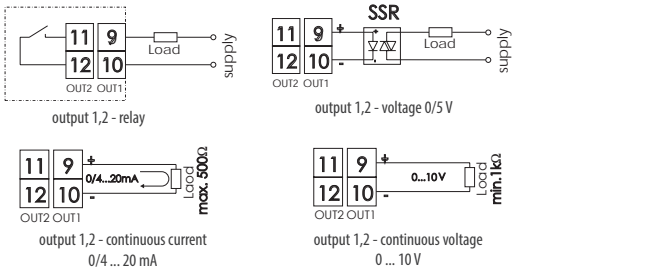


Fig.88 Connection of load circuit



RE82

Fig. 89 View of RE82 controller connection strips

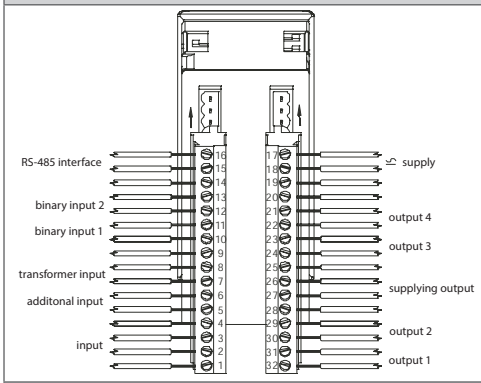


Fig.90 Connection of input signals

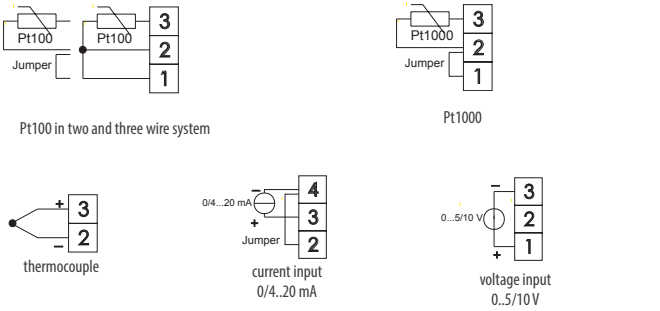


Fig.91 Remaining connections

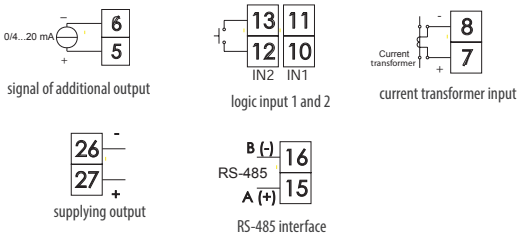
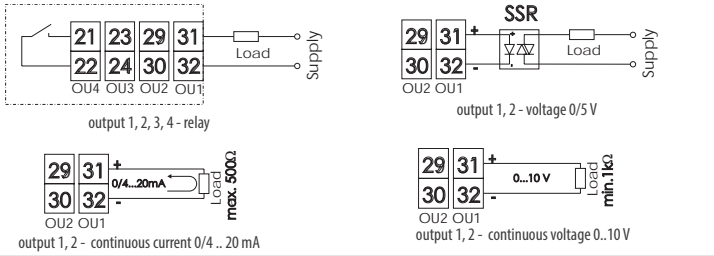
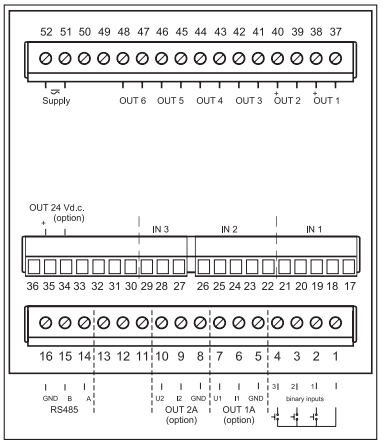


Fig.92 Connection of load circuit



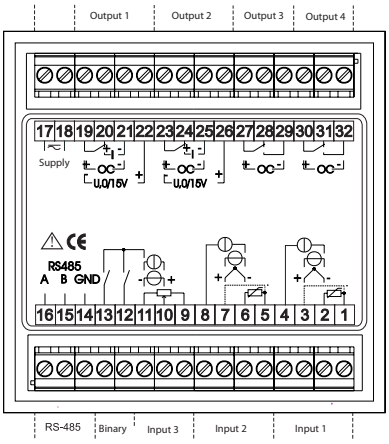
RE92

Fig. 93 View of RE92 controller connection strips



RE19

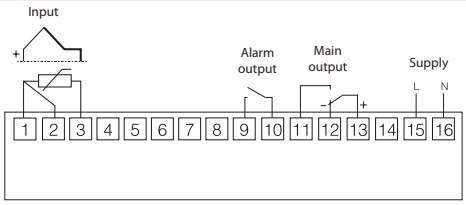
Fig. 94 View of RE19 controller connection strips



CONNECTION DIAGRAMS

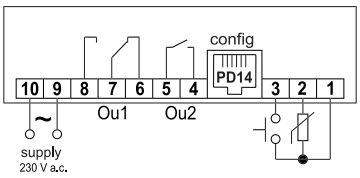
RE55

Fig. 95 View of RE55 controller connection strips



RE01

Fig. 96 View of RE01 controller connection strips



RE60

Fig. 97 View of RE60 controller connection strips

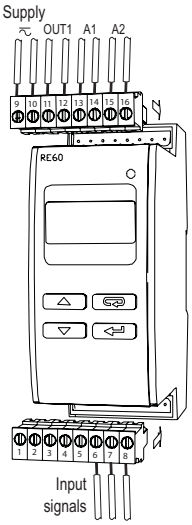


Fig.98 Connection of input signals

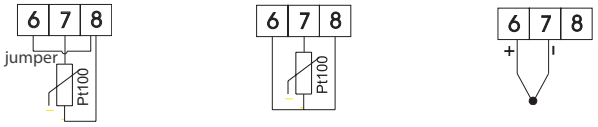
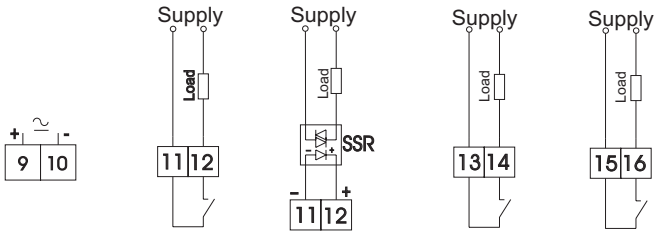


Fig.99 Connection of supply and load circuit



RE62

Fig. 100 View of RE62 controller connection strips

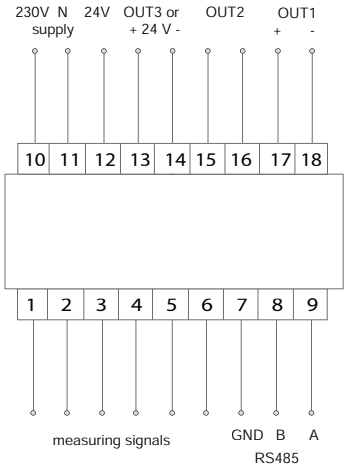


Fig.101 Connection of measuring signals

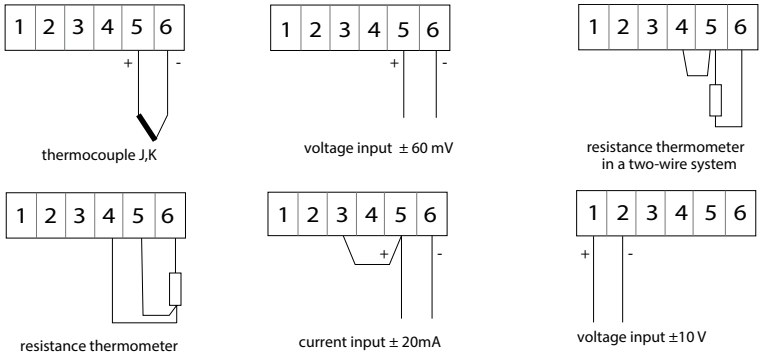
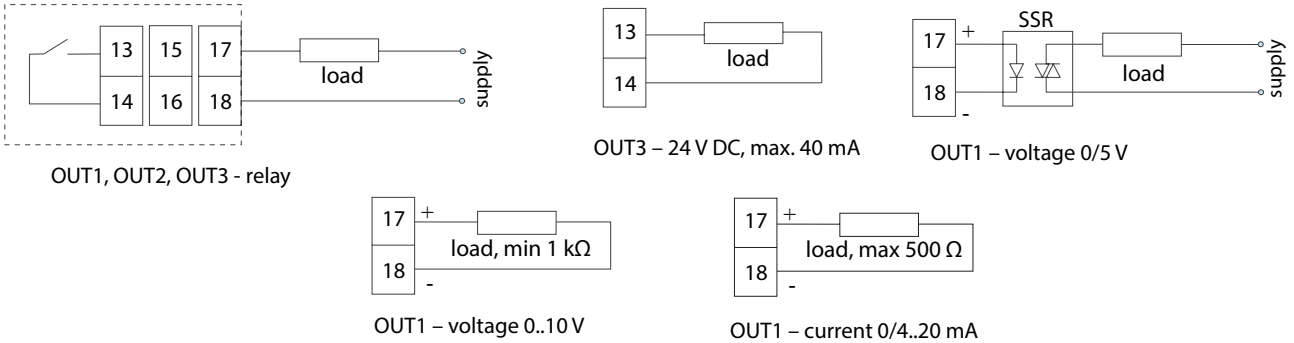


Fig.102 Connection of steering/alarm outputs



Industrial process controllers

Table 45. RE22 ordering code:

RE22 -	X	X	X	XX	X
Input:					
universal for RTD and TC sensors	1				
universal linear: - current: 0/4..20 mA - voltage: 0..5/10V	2				
on order*	X				
Output:					
relay		1			
logic 0/5 V for SSR control		2			
on order*		X			
Supply:					
230 V 50/60 Hz			1		
110 V 50/60 Hz			2		
24 V 50/60 Hz			3		
on order*			X		
Version:					
standard				00	
custom-made*				XX	
Acceptance tests:					
without extra requirements					8
with an extra quality inspection certificate					7
acc. to customer's request*					X

Table 46. RE71 ordering code:

RE71 -	XX	X	X	X	X
Input:					
Pt100 (-50..100 °C)	01				
Pt100 (0..250 °C)	02				
Pt100 (0..600 °C)	03				
thermocouple J (Fe-CuNi)(0...250°C)	04				
thermocouple J (Fe-CuNi)(0...600°C)	05				
thermocouple J (Fe-CuNi)(0...900°C)	06				
thermocouple K (NiCr-NiAl)(0...600°C)	07				
thermocouple K (NiCr-NiAl)(0...900°C)	08				
thermocouple K (NiCr-NiAl)(0...1300°C)	09				
thermocouple S (PtRh10-Pt)(0...1600°C)	10				
Output:					
relay		1			
logic 0/6 V to SSR control		2			
Version:					
standard			00		
custom-made*			XX		
Language:					
Polish				P	
English				E	
other*				X	
Acceptance tests:					
without extra requirements					0
with an extra quality inspection certificate					1
acc. to customer's request*					X

Table 47. RE81 ordering code:

RE81 -	XX	X	X	X	X
Input:					
Pt100 (-50..100 °C)	01				
Pt100 (0..250 °C)	02				
Pt100 (0..600 °C)	03				
thermocouple J (Fe-CuNi)(0...250°C)	04				
thermocouple J (Fe-CuNi)(0...600°C)	05				
thermocouple J (Fe-CuNi)(0...900°C)	06				
thermocouple K (NiCr-NiAl)(0...600°C)	07				
thermocouple K (NiCr-NiAl)(0...900°C)	08				
thermocouple K (NiCr-NiAl)(0...1300°C)	09				
thermocouple S (PtRh10-Pt)(0...1600°C)	10				
Output 1:**					
relay		1			
logic 0/6 V to SSR control		2			
Version:					
standard			00		
custom-made*			XX		
Language:					
Polish				P	
English				E	
other*				X	
Acceptance tests:					
without extra requirements					0
with an extra quality inspection certificate					1
acc. to customer's request*					X

** - output 2: relay

Table 48. RE70 ordering code:

RE70 -	X	X
Language:		
Polish	P	
English	E	
other*	X	
Acceptance tests:		
without extra requirements		0
with an extra quality inspection certificate		1
acc. to customer's request*		X

* - after agreeing with the manufacturer

Table 49. RE72 ordering code:

RE72 -	X	X	X	X	X	X	X
Output 1:							
relay	1						
voltage 0/5 V	2						
continuous current 0/4 ... 20 mA	3						
continuous voltage 0 ... 10 V	4						
Output 2:							
relay[1)]		1					
voltage 0/5 V		2					
continuous current 0/4 ... 20 mA		3					
continuous voltage 0 ... 10 V		4					
Options:							
none			0				
output 3 - relay			1				
logic input			2				
current transformer input[1)]			3				
additional current input 0/4 .. 20 mA			4				
transducer supply 24 V d.c. 1 W			5				
Supply:							
85 ... 253 V a.c./ d.c.				1			
20 ... 40 V a.c./ d.c.				2			
Version:							
standard					00		
custom-made[2)]					XX		
Language:							
Polish						P	
English						E	
other[2)]						X	
Acceptance tests:							
without extra requirements							0
with an extra quality inspection certificate							1
acc. to customer's request[2)]							X

1) - only, when a relay or voltage output 0/5 V is also selecteds
2) - after agreeing with the manufacturer

Table 50. RE82 ordering code:

RE82 -	X	X	X	X	X	X	X
Output 1:							
relay	1						
voltage 0/5 V	2						
continuous current 0/4 .. 20 mA	3						
continuous voltage 0 .. 10 V	4						
Output 2:							
relay[1)]		1					
voltage 0/5 V		2					
continuous current 0/4 ... 20 mA		3					
continuous voltage 0 ... 10 V		4					
Tansducer supply:							
none			0				
supply of relays 24 V d.c. 1 W			1				
Supply:							
85 .. 253 V a.c./ d.c.				1			
20 .. 40 V a.c./ d.c.				2			
Version:							
standard					00		
custom-made[2)]					XX		
Language:							
Polish						P	
English						E	
other[2)]						X	
Acceptance tests:							
without extra requirements							0
with an extra quality inspection certificate							1
acc. to customer's request[2)]							X

1) only, when on the output 1, a relay or voltage 0/5 V is also selected
2) after agreeing with the manufacturer

ORDERING CODES

Table 51. RE92 ordering code:

RE92 -	X	X	X	X	X	XX	X	X
Additional input:								
lack	0							
current: 0/4..20 mA	1							
voltage: 0..10 V	2							
potentiometric transmitter: 1000 Ω	3							
Output 1 and 2:								
2 relays		1						
2 logic outputs 0/5 V		2						
Analog output:								
lack			0					
2 continuous 0/4...20 mA and 0...10 V			1					
Ethernet/SD card:								
lack				0				
with Ethernet/SD card				1				
Transducer supply:								
lack					0			
24 V d.c.					1			
Version:								
standard						00		
custom-made*						XX		
Language:								
Polish							P	
English							E	
other*							X	
Acceptance tests:								
without extra requirements								0
with an extra quality inspection certificate								1
acc. to customer's request*								X

* - after agreeing with the manufacturer

in standard version: 2 universal inputs, 3 logic inputs, 6 relay outputs, RS-485 Modbus Slave

Table 52. RE19 ordering code:

RE19 -	X	X	X	X	X	X
Version:						
constant-valued control	S					
step-by-step control	V					
programmable control	P					
on order*	X					
Additional input:						
without input		0				
current: 0/4..20 mA		1				
voltage: 0..10 V, 0..5 V, 1..5 V potentiometric transmitter:: 100 Ω potentiometric transmitter:: 1000 Ω		2				
on order*		X				
Outputs:						
4 relays			1			
4 OC transistors			2			
1 transistor 0/15 V + 3 relays			3			
2 transistors 0/15 V + 2 relays			4			
1 continuous + 3 relays			5			
1 continuous + 3 OC transistors			6			
2 continuous + 2 relays			7			
2 continuous + 2 OC transistors			8			
1 continuous + 1 transistor 0/15 V + 2 relays			9			
on order*			X			
Interface RS-485:						
without Interface				0		
with MODBUS protocol				1		
Supply voltage:						
85..253 V a.c./d.c.					1	
18..30 V d.c.					2	
Acceptance tests:						
without extra requirements						8
with an extra quality inspection certificate						7
acc. to customer's request*						X

Table 53. RE55 ordering code:

RE55 -	XX	X	X	XX	X
Input:					
Pt100 (-50..100 °C)	01				
Pt100 (0..100 °C)	02				
Pt100 (0..150 °C)	03				
Pt100 (0..250 °C)	04				
Pt100 (0..400 °C)	05				
Pt100 (0..600 °C)	06				
thermocouple J - Fe-CuNi (0..250 °C)	07				
thermocouple J - Fe-CuNi (0..400 °C)	08				
thermocouple J - Fe-CuNi (0..600 °C)	09				
thermocouple J - Fe-CuNi (0..900 °C)	10				
thermocouple K - NiCr-NiAl (0..600 °C)	11				
thermocouple K - NiCr-NiAl (0..900 °C)	12				
thermocouple K - NiCr-NiAl (0..1300 °C)	13				
thermocouple S - PtRh10-Pr (0..1600 °C)	14				
on order*	99				
Version:					
on-off controller		1			
PID controller		2			
PID controller configurable by buttons and with alarm output		3			
Control output:					
relay			1		
voltage 0/5 V			2		
Version:					
standard				00	
custom-made*				XX	
Acceptance tests:					
without extra requirements					8
with an extra quality inspection certificate					7
acc. to customer's request*					X

Table 54. RE60 ordering code:

RE60 -	XX	X	X	X	X
Input:					
Pt100 (-50..100 °C)	01				
Pt100 (0..250 °C)	02				
Pt100 (0..600 °C)	03				
thermocouple J - Fe-CuNi (0..250 °C)	04				
thermocouple J - Fe-CuNi (0..600 °C)	05				
thermocouple J - Fe-CuNi (0..900 °C)	06				
thermocouple K - NiCr-NiAl (0..600 °C)	07				
thermocouple K - NiCr-NiAl (0..900 °C)	08				
thermocouple K - NiCr-NiAl (0..1300 °C)	09				
thermocouple S - PtRh10-Pr (0..1600 °C)	10				
on order	XX				
Main output:					
relay		1			
logic 0/5 V to SSR control		2			
on order		X			
Alarm outputs:					
without outputs			0		
1 relay			1		
2 relays			2		
on order			X		
Supply:					
230 V a.c. 50/60 Hz				1	
110 V a.c. 50/60 Hz				2	
24 V a.c. 50/60 Hz				3	
18..72 V d.c.				4	
on order				X	
Acceptance tests:					
without extra requirements					8
with an extra quality inspection certificate					7
acc. to customer's request*					X

Table 55. RE62 ordering code:

RE62 -	X	X	X	XX	X	X
Additional output OUT1:						
without additional output	0					
relay 5 A 230 V	1					
0/4...20 mA (galvanic isolated)	2					
0...10 V (galvanic isolated)	3					
0/5 V 30 mA (for SSR, galvanic isolated)	4					
Additional output OUT3:						
without additional output		0				
relay 5 A 230 V		1				
supply output 24 V d.c./ 40 mA (galvanic isolated)		2				
Interface RS-485:						
without Interface			0			
with RS-485 (galvanic isolated)			1			
Version:						
standard				00		
custom-made*				XX		
Language:						
Polish					P	
English					E	
other*					X	
Acceptance tests:						
without extra requirements						0
with an extra quality inspection certificate						1
acc. to customer's request*						X

* - after agreeing with the manufacturer

Table 56. RE01 ordering code:

RE01 -	X	XX	X	X
Input:				
Pt100	1			
Pt1000	2			
NTC 2,7k	3			
Version:				
standard		00		
custom-made*		XX		
Language:				
Polish			P	
English			E	
other*			X	
Acceptance tests:				
without extra requirements				0
with an extra quality inspection certificate				1
acc. to customer's request*				X

APPLICATION:

- temperature control in injection mould with heated channels (SR11)

SELECTED FEATURES:

- Fuzzy Logic algorythm ensures a high accuracy temperature control and optimal energy consumption
- soft-start function and leakage current monitoring ensure prolonged heaters reliability and operation safety for users
- during a break in system operation, a decreased temperature is maintained, what ensures a fast restart of the system
- damage detection:
  - too high heater leakage current,
  - damage of the load circuit,
  - short-circuit, break or inverse polarization in the sensor circuit.

Temperature control in an injection mould

SR11 system

Injection mould

CONTROLLER FOR INJECTION MOULDS

Type

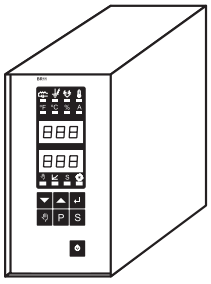
	System for injection moulds with heated channels
	SR11
Number of channels	1...8
Input	fixed Fe-CuNi (J) logic 24 V d.c.
Output	1 output per control zone (15 A)
Control	Fuzzy Logic, PID with self-tuning
Interface	RS-485 with Modbus protocol (option)
Display	LED 14 mm 2 x 3 digits
Supply voltage	230 V a.c. (for system with 1 control zone) 3 x 230/ 400 V a.c. (for system with 2...8 control zones)
Protection rating	IP30
External dimensions	77.5 x 200 x 355mm (1 control zone) 215 x 197 x 355mm (2 or 3 control zones) 365 x 197 x 355mm (4, 5 or 6 control zones) 465 x 197 x 355 (7 or 8 control zones)
Additional functions	• Fuzzy Logic algorythm ensures a high accuracy temperature control and optimal energy consumption • soft-start function and leakage current monitoring ensure prolonged heaters reliability and operation safety for users • during a break in system operation, a decreased temperature is maintained, what ensures a fast restart of the system • damage detection: - too high heater leakage current, - damage of the load circuit, - short-circuit, break or inverse polarization in the sensor circuit.

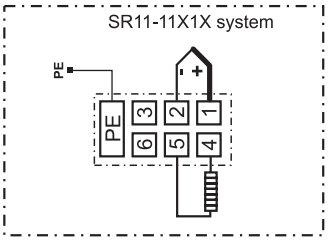
CONNECTION DIAGRAMS

SR11

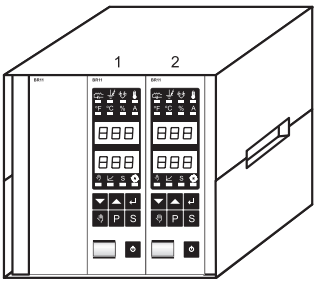
Fig. 100 View of individual versions of the SR11 system

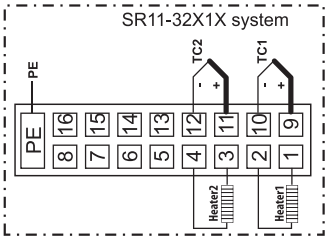
SR11-11X1X





SR11-32X1X

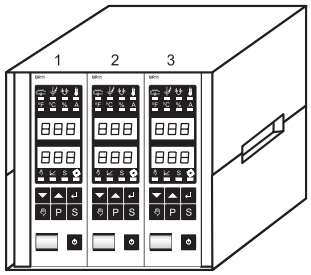


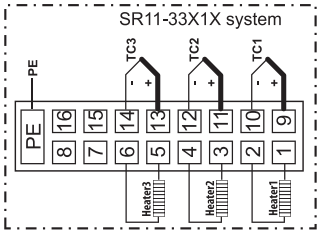


LUMEL EVERYTHING COUNTS

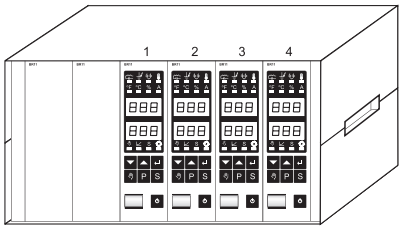
SR11

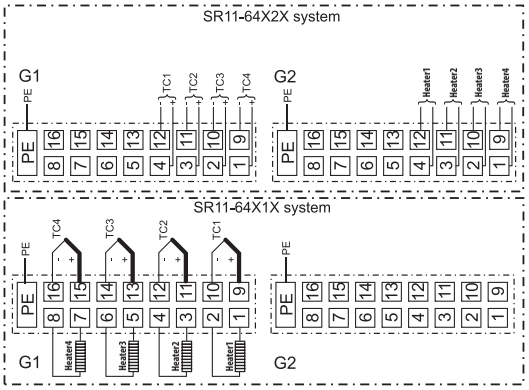
SR11-33X1X



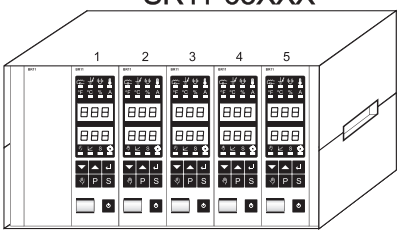


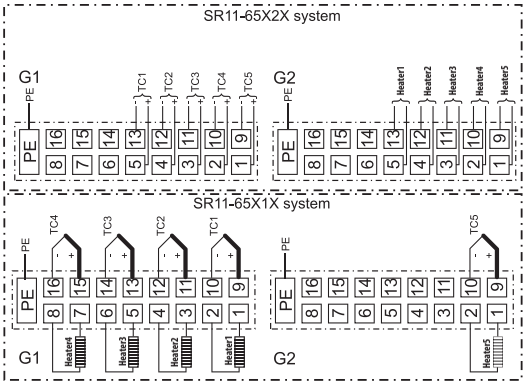
SR11-64XXX



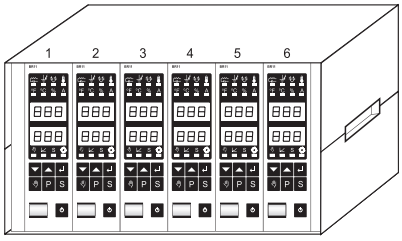


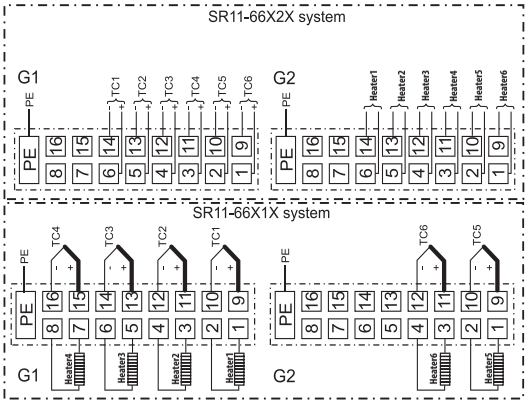
SR11-65XXX





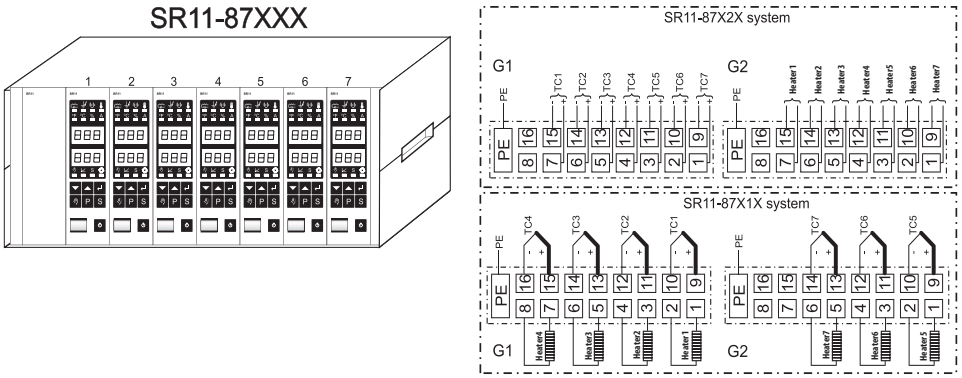
SR11-66XXX





CONNECTION DIAGRAMS

SR11



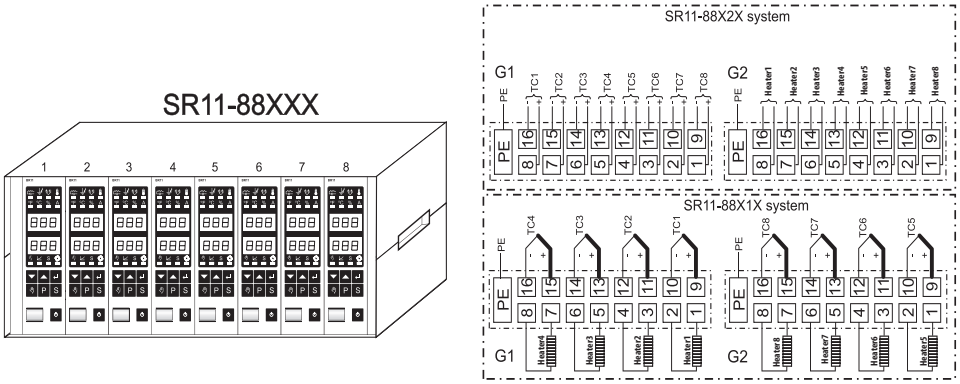
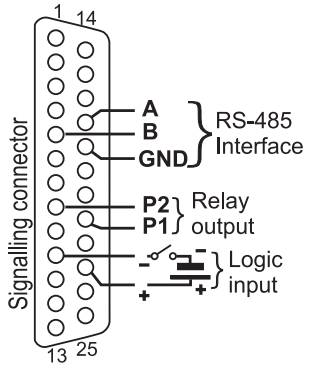


Fig. 101 Way of SR11 system external connections



ORDERING CODES

System for injection moulds with heated channels

Table 56. SR11 ordering code:

SR11 -	X	X	X	X	X
Housing dimensions:					
housing width: 77.5 mm, number of controllers: 1	1				
housing width: 215 mm, number of controllers: 2, 3	3				
housing width: 365 mm, number of controllers: 4, 5, 6	6				
housing width: 465 mm, number of controllers: 7, 8	8				
Number of controllers:					
1 controller		1			
2 controllers		2			
3 controllers		3			
4 controllers		4			
5 controllers		5			
6 controllers		6			
7 controllers		7			
8 controllers		8			
Interface RS-485:					
without interface			0		
with interface			1		
Mould connectors:					
common connectors for thermocouples and heaters				1	
separate connectors for thermocouples and heaters[1)]				2	
Acceptance tests:					
without extra requirements					8
with an extra quality inspection certificate					7
acc. to customer's request[2)]					X

1) concerns only versions with 365 mm and 465 mm housing width mm
2) after agreeing with the manufacturer

APPLICATION:

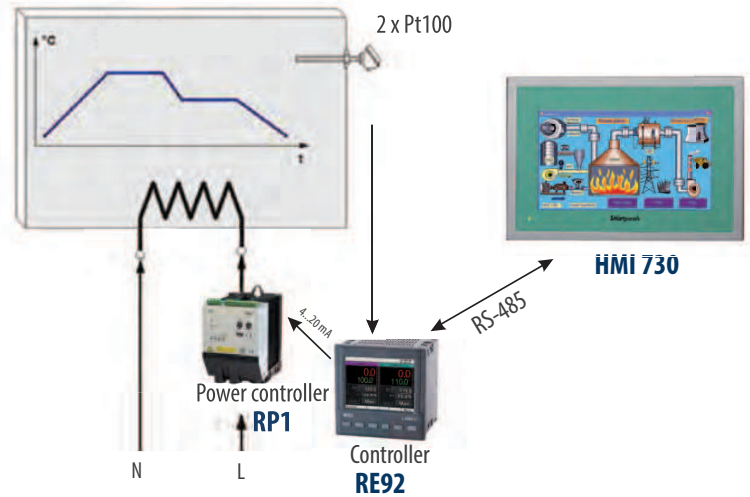
- smooth power control in single-phase networks
- destined for three-phase actuators in control systems and for automatic temperature control of electrothermal devices

SELECTED FEATURES:

- on-off or pulse control
- phase control
- switching on at zero voltage or in any time
- many additional functions:
  - limitation of the load current,
  - release time-lag of soft-start type,
  - control of the input circuit amplification,
  - stoppage of the triggering by an external signal,
  - checking and signalling of the current in the circuit,
  - checking of the radiator temperature,
  - signalling of the fuse damage,
  - signalling of overload,
  - relay outputs.

APPLICATION EXAMPLES

Program following temperature control in a high power oven with electrical heaters



POWER CONTROLLERS

Type

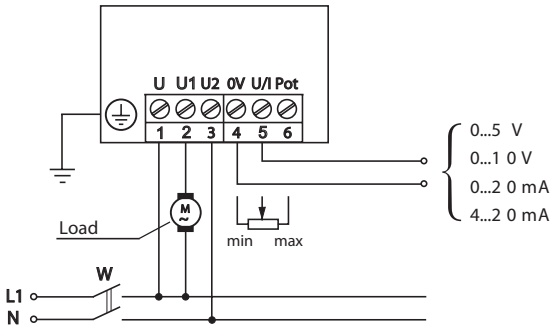



	RP7	RP1	RPL1	RP3
Version	1-phase			3-phase
Control	phase	phase, pulse, on/off		
Input signal	0..5/10V, 0/4..20mA potentiometer			
Output	-	voltage (1) – Master/Slave (for co-operation with second power controller) relays (2)		
Max. output current	15A	125A		3 x 450A
Load supply voltage	230 V	230 V, 400 V a.c.	230, 400, 500 V a.c.	400 V a.c.
Load configuration	2-wire	2 or 3-wire		3, 4 or 6-wire
External dimensions	50 x 105 x 105 mm	135 x 201 x 199 mm 135 x 231 x 199 mm	135 x 201 x 199 mm 135 x 231 x 199 mm - RPL1-x4xx (version with fan)	212 x 318 x 177 mm (40, 70, 125 A versions) 383 x 433 x 281 mm (200, 300, 450 A versions)

CONNECTION DIAGRAMS

RP7

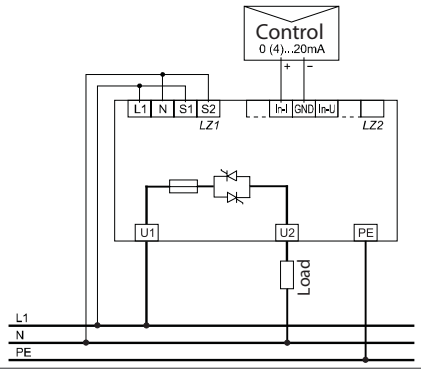
Fig. 102 Electrical connections of RP7



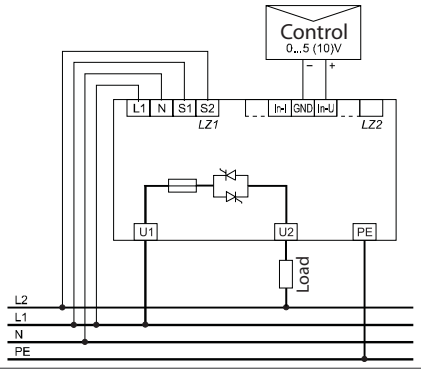
RP1

Fig.103 Connection of load in a single-phase system

a) load supply
U_{LOAD} = 230 V,
supply U_{GTS} = 230 V



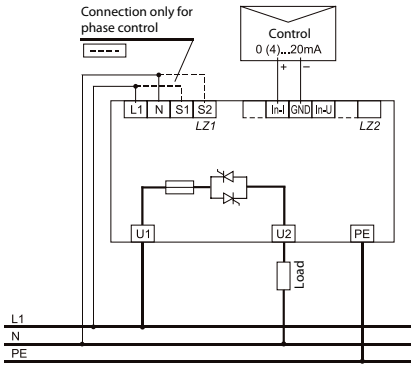
b) load supply
U_{LOAD} = 400 V,
Supply U_{GTS} = 230 V



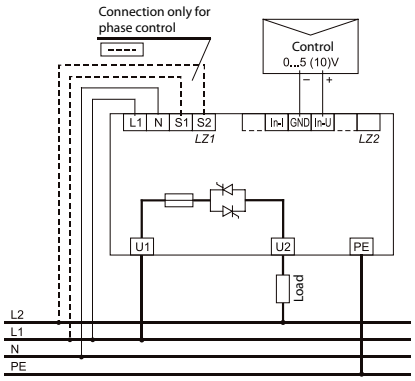
RPL1

Fig.104 Connection of load in a single-phase system

a) load supply
U_{LOAD} = 230 V,
supply U_{GTS} = 230 V



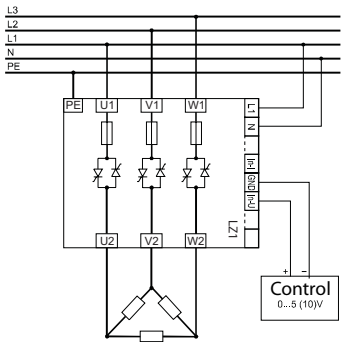
b) load supply
U_{LOAD} = 400 V,
supply U_{GTS} = 230 V



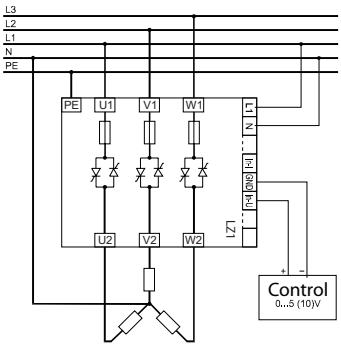
RP3

Fig. 105 Connection of load in a 3- and 4-wire system

a) three-wire load



b) four-wire load



ORDERING CODES

Power controllers

Table 57. RP7 ordering code:

	RP7 -	X	X
Maximal current output:			
5 A	1		
10 A	2		
15 A	3		
Acceptance tests:			
without extra requirements	8		
with an extra quality inspection certificate	7		
acc. to customer's request*	X		

Table 58. RP1 ordering code:

	RP1 -	X	X	X
Maximal current output:				
25 A	1			
40 A	2			
70 A	3			
125 A	4			
load voltage: 24...400 V a.c. 50/60 Hz				
Gate triggering system (GTS):				
supply voltage 85...115...135 V a.c.	1			
supply voltage 195...230...253 V a.c.	2			
Acceptance tests:				
without extra requirements	8			
with an extra quality inspection certificate	7			
acc. to customer's request	X			

Table 59. RPL1 ordering code:

	RPL1 -	X	X	X	XX	X	X
Control:							
phase	1						
pulse/ on/off	2						
Current range:							
maximal current output 25 A		1					
maximal current output 40 A		2					
maximal current output 70 A		3					
maximal current output 125 A*		4					
Load voltage:							
supply voltage - 195...230...253 V a.c.			1				
supply voltage - 340...400...440 V a.c.			2				
supply voltage - 425...500...550 V a.c.			3				
Version:							
standard				00			
custom-made**				XX			
Language:							
Polish					P		
English					E		
other**					X		
Acceptance tests:							
without extra requirements						0	
with an extra quality inspection certificate						1	
acc. to customer's request*						X	

Table 60. RP3 ordering code:

	RP3 -	X	X
Maximal current output:			
40 A	1		
70 A	2		
125 A	3		
200 A	4		
300 A	5		
450 A	6		
load voltage: 3 - 400 V a.c. 50 Hz			
Acceptance tests:			
without extra requirements	8		
with an extra quality inspection certificate	7		
acc. to customer's request*	X		

* the version RPL1- x4xx has a fixed fan
** after agreeing with the manufacturer