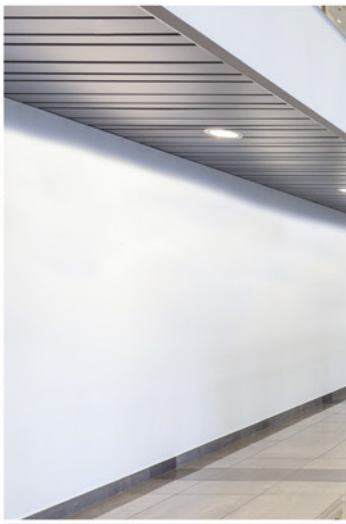
Time relays

www.relpol.com.pl

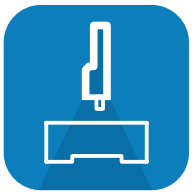
2015–2016

relpol® S.A.

Time relays



35 MM



PANEL

35 MM

35 MM

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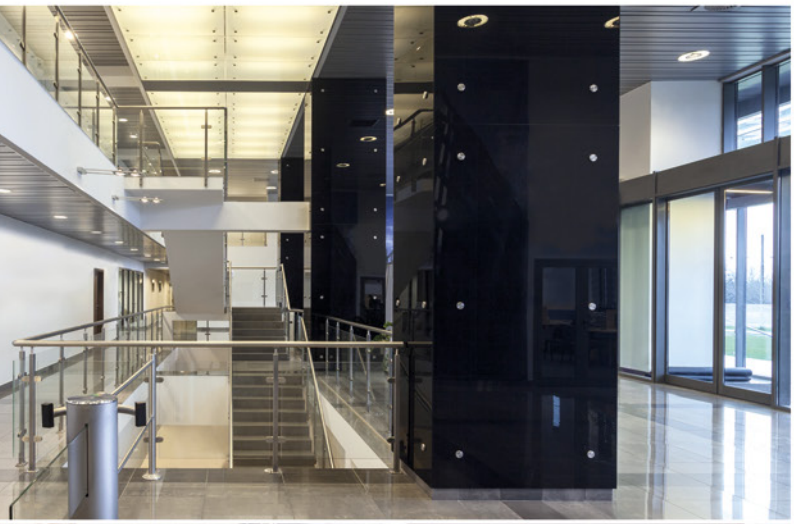
time relays

- low voltage systems,
- in industrial automation,
- in BMS automation,
- in air-conditioning, ventilation, heating systems,
- in protection, signalling, alarm systems,
- in lighting systems,
- various other applications.



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time relays – modular covers

MT-**TUA...** | MT-**TUB...**

multifunctions
– see pages 10-11

MT-TUA...

MT-TUB...

35 MM

		MT-TUA...	MT-TUB...
Number & type of outputs		1 CO	1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷
Terminals		screw terminals	

❶ DC1: 0,3 A / 250 V DC ❷ In the bracket the length with 35 mm rail taps is shown

time relays – modular covers

MT-W...M

multifunctions
independent times T1, T2, T3
– see pages 10-11

MT-W...M

times sets with the accuracy of 0,1 s

		MT-W...M ❸
Number & type of outputs		1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 65,5 ❷
Terminals		screw terminals

❷ In the bracket the length with 35 mm rail taps is shown
❸ MT-W...M: two digit LED display, programming with two buttons only

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time relays – modular covers

MT-TER... | MT-TEA...

MT-TER...

MT-TEA...

single-functions
independent times T1, T2
– see pages 10-11

35 MM

		MT-TER...	MT-TEA...
Number & type of outputs		1 CO	1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷
Terminals		screw terminals	

❶ DC1: 0,3 A / 250 V DC ❷ In the bracket the length with 35 mm rail taps is shown

time relays – modular covers

MT-TES... | MT-TEU... | MT-TIP...

MT-TES...

MT-TEU...

MT-TIP...

single-functions
independent times T1, T2
– see pages 10-11

		MT-TES...	MT-TEU...	MT-TIP...
Number & type of outputs		1 CO	1 CO	1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷
Terminals		screw terminals		

❶ DC1: 0,3 A / 250 V DC
❷ In the bracket the length with 35 mm rail taps is shown

35 MM

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time relays – modular covers

MT-TSA... | MT-TWT...

single-functions
independent times T1, T2
– see pages 10-11


MT-TSA...


MT-TWT...

35 MM

		MT-TSA...	MT-TWT...
Number & type of outputs		1 CO	1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷
Terminals		screw terminals	

❶ DC1: 0,3 A / 250 V DC ❷ In the bracket the length with 35 mm rail taps is shown

time relays – modular covers

MT-TE... | MT-TWU... | MT-TBP...

NEW

single-functions
– see pages 10-11


MT-TE...


MT-TWU...


MT-TBP...

		MT-TE...	MT-TWU...	MT-TBP...
Number & type of outputs		1 CO	1 CO	1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶	10 A / 250 V AC 10 A / 24 V DC ❶
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷	90(98,8) x 17,5 x 63,5 ❷
Terminals		screw terminals		

❶ DC1: 0,3 A / 250 V DC
❷ In the bracket the length with 35 mm rail taps is shown

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time relays – modular covers

TR-EM...

multifunctions
– see pages 10-11

TR-EM1P-UNI

TR-EM2P-UNI

35 MM

		TR-EM1P-UNI	TR-EM2P-UNI
Number & type of outputs		1 CO	2 CO
Rated load	AC1	8 A / 250 V AC	8 A / 250 V AC
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	87 x 17,5 x 65	87 x 35 x 65
Terminals		screw terminals	

time relays – modular covers

TR-EI...

multifunctions
independent times T1, T2
– see pages 10-11

TR-EI1P-UNI

TR-EI2P-UNI

35 MM

		TR-EI1P-UNI	TR-EI2P-UNI
Number & type of outputs		1 CO	2 CO
Rated load	AC1	8 A / 250 V AC	8 A / 250 V AC
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	87 x 17,5 x 65	87 x 35 x 65
Terminals		screw terminals	

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time relays – modular covers

MT-TSD... | TR-ES...

MT-TSD...

TR-ES2P-UNI

Star-Delta
independent times T1, T2
– see pages 10-11

35 MM

		MT-TSD...	TR-ES2P-UNI
Number & type of outputs		2 x 1 CO	2 x 1 CO
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC ❶	8 A / 250 V AC
Input rated voltage	AC/DC	AC: 50/60 Hz: 12...240 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	90(98,8) x 17,5 x 63,5 ❷	87 x 35 x 65
Terminals		screw terminals	

❶ DC1: 0,3 A / 250 V DC ❷ In the bracket the length with 35 mm rail taps is shown

time relays – industrial covers

TR4N 1 CO, 2 CO, 4 CO

multifunctions
– see pages 10-11

TR4N 1 CO

TR4N 2 CO

TR4N 4 CO

		TR4N 1 CO	TR4N 2 CO	TR4N 4 CO
Number & type of outputs		1 CO	2 CO	4 CO
Rated load	AC1 DC1	16 A / 250 V AC 16 A / 24 V DC ❶	8 A / 250 V AC 8 A / 24 V DC ❶	6 A / 250 V AC 6 A / 24 V DC ❹
Input rated voltage	AC AC/DC	50/60 Hz: 115, 230 V AC: 50/60 Hz: 12, 24 V	50/60 Hz: 115, 230 V AC: 50/60 Hz: 12, 24 V	50/60 Hz: 115, 230 V AC: 50/60 Hz: 12, 24 V
Dimensions	mm	90 x 17,6 x 55	90 x 17,6 x 55	90 x 36 x 55
Terminals		screw terminals		

❶ DC1: 0,3 A / 250 V DC
❹ DC1: 0,15 A / 250 V DC

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time relays – industrial covers

T-R4

single-functions
– see pages 10-11

T-R4E

T-R4 + GZM4 ❺

		T-R4E/Wu/Bp/Bi ❺
Number & type of outputs		4 CO
Rated load	AC1	6 A / 230 V AC
Input rated voltage	AC DC	50/60 Hz: 24, 115, 230 V 12, 24 V
Dimensions	mm	75 x 27 x 91,5 ❺
Terminals		screw terminals ❺

four versions: T-R4E, T-R4Wu, T-R4Bp, T-R4Bi

❺ T-R4: mounted in plug-in socket GZM4

35 MM

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time relays – industrial covers

PIR15...T | COM3

multifunctions
– see pages 10-11

PIR15...T 2 CO ❻ (R15 2 CO + GZP8 + COM3)

PIR15...T 3 CO ❻ (R15 3 CO + GZP11 + COM3)

COM3 ❼

		PIR15...T ❻	COM3 ❼
Number & type of outputs		2 CO, 3 CO	❼
Rated load	AC1 DC1	10 A / 250 V AC 10 A / 24 V DC	
Input rated voltage	AC DC AC/DC	50/60 Hz: 24, 48, 60, 110, 120, 230, 240 V 24, 48, 60, 110, 120, 220 V	AC: 50/60 Hz: 12...240 V
Dimensions	mm	73 x 38,2 x 85,4	26,5 x 35 x 47
Terminals		screw terminals	for plug-in sockets

❻ PIR15...T: with time module COM3 ❼ COM3: universal time module – outputs according to R15 2 CO, 3 CO

35 MM

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Time **functions**

Descriptions and diagrams of time functions – see www.relpol.com.pl	
B	Cyclical operation controlled with closing of the control contact S.
Bi	Symmetrical cyclical operation pulse first.
Bp	Symmetrical cyclical operation pause first.
E	ON delay.
ER	ON delay and OFF delay with the control contact S.
E(r)	Delayed turning on with the Reset function.
E(S)	Delayed turning on with time measuring stop by contact S.
Es	ON delay with the control contact S.
Esa	ON and OFF delay with the control contact S.
Esf	ON delay with the control contact S without the interval T extension.
Esp	ON delay - one cycle, with the control contact S.
Est	ON delay with closing of the control contact S, with the interval T extended.
EWa	OFF delay and breaking time delay with opening of the control contact S.
EWf	Delayed turning on and delayed turning off, controlled by control contact S.
EWs	ON delay and ON for the set time with closing of the control contact S.
EWu	Delayed turning on for the set time.
EWu + NWu	ON delay for the set interval or switching ON for the set interval - switching OFF for the set interval - continuous ON with the control contact S.
Ii	Cyclical operation pulse first.
Ii + Ip	Cyclical operation in two independent intervals T1 and T2. Operation in the function Ii or Ip depending on the position of the control contact S.
Ip	Cyclical operation pause first.
OFF	Constant service off.
ON	Constant service on.
ON / OFF	Permanent switching ON and OFF.
Pi	Cyclical operation pulse first.
Pi(S)	Cyclical operation pulse first.
Pp	Cyclical operation pause first.
Pp(S)	Cyclical operation pause first.
PWM	Pulse width modulation.
R	Delayed turning off controlled by contact S.
Ra	OFF delay with the control contact S, without extension of the interval T.
SD	Star-Delta start-up.
T	Generation of the 0,5 s pulse after the interval T.
Wa	ON for the set interval triggered with the control contact S.
Wi	ON for the set interval controlled by closing of the control contact S.
Ws	Single shot for the set interval triggered by closing of the control contact S.
Wst	ON for the set interval by closing the control contact S.
WsWa	ON for the set intervals T1 and T2 with the control contact S.
Wt	Monitoring of the sequence of pulses.
Wu	ON for the set interval.
Wu(r)	Turning on at the set time with the Reset function.
Wu(S)	Turning on at the set time, with time measuring stop by closing contact S.

Time functions performed	MT-TUA...	MT-TUB...	MT-W...M	MT-TER...	MT-TEA...	MT-TES...	MT-TEU...	MT-TIP...	MT-TSA...	MT-TWT...	MT-TE-...	MT-TWU-...	MT-TBP-...	TR-EM1P-UNI	TR-EM2P-UNI	TR-EI1P-UNI	TR-EI2P-UNI	MT-TSD...	TR-ES2P-UNI	TR4N 1 CO, 2 CO	TR4N 4 CO	T-R4	PIR15...T, COM3
B		✓	✓																	✓	✓		
Bi																				✓	✓	✓	✓
Bp	✓												✓	✓	✓					✓	✓	✓	✓
E	✓		✓								✓			✓	✓					✓	✓	✓	✓
ER			✓	✓													✓						
E(r)			✓																				
E(S)			✓																				
Es			✓											✓	✓								✓
Esa																				✓	✓		
Esf		✓																					
Esp		✓	✓																				
Est		✓	✓																				
EWa			✓		✓																		
EWf			✓																				
EWs			✓			✓											✓						
EWu			✓														✓						
EWu + NWu							✓																
Ii																✓	✓						
Ii + Ip								✓															
Ip																✓	✓						
OFF			✓																				
ON			✓																				
ON / OFF	✓	✓									✓	✓	✓							✓	✓		
Pi			✓																				
Pi(S)			✓																				
Pp			✓																				
Pp(S)			✓																				
PWM																				✓	✓		
R	✓		✓											✓	✓					✓	✓		✓
Ra		✓																					
SD																		✓	✓				
T	✓																						
Wa	✓		✓											✓	✓					✓	✓		✓
Wi		✓	✓																				
Ws	✓		✓											✓	✓					✓	✓		✓
Wst		✓																					
WsWa			✓						✓								✓						
Wt			✓							✓							✓						
Wu	✓		✓									✓		✓	✓					✓	✓	✓	✓
Wu(r)			✓																				
Wu(S)			✓																				

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The offer of Relpol S.A. includes the following products:

subminiature signal relays
rated switching capacity: from 0,5 A to 3 A, coil voltage range: from 3 V to 48 V DC

miniature relays
rated switching capacity: from 5 A to 20 A

industrial relays
rated switching capacity: from 5 A to 48 A, mounting: to plug-in sockets
on 35 mm rail mount acc. to PN-EN 60715 or on panel mounting, for PCB

interface relays
rated switching capacity: from 0,05 A to 16 A, number of contacts: from 1 to 4

programmable relays NEED
versions: 8 inputs / 4 outputs, 16 inputs / 8 outputs, with LCD display,
without display, supply voltages: 12 V DC, 24 V DC, 220 V DC, 230 V AC,
programming: LAD, STL, LED indicators of the relay and input / output status

time relays
single- and multifunction time relays, wide range of time adjustments

monitoring relays
monitoring of current, voltage, temperature

solid state relays
rated load currents: from 1 A to 100 A, switching at zero or at any time

plug-in sockets for relays
for PCB, for 35 mm rail mount acc. to PN-EN 60715 or on panel mounting

installation contactors RIK
rated switching power: from 2,2 kW to 15 kW /at 400 V AC3/

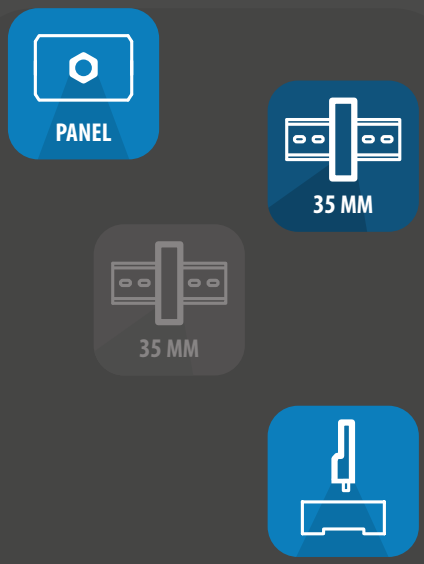
power supplies
for automation systems, output circuit: 12 V DC, 24 V DC,
rated currents: from 0,42 A to 20 A

overvoltage arresters
classes I, II and III, available with changeover signal contact

systems SMP
radiation portal monitors

protection relays CZIP®-PRO
digital protection, automation, measurement, control and communication
system for MV switchgears

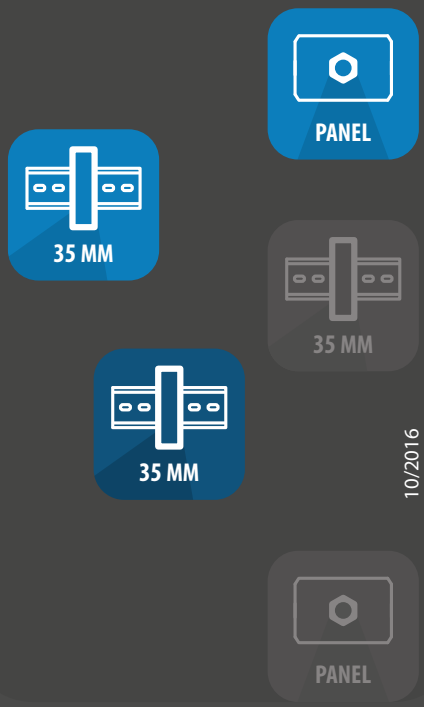
LISTED ON GPW WARSAW STOCK EXCHANGE



Due to the permanent development policy, Relpol S.A. reserves the right to introduce changes of data and characteristics of the products. The devices shall be operated by skilled personnel in accordance with the regulations in force pertaining to electrical systems. The technical data are of informational nature. Thus, Relpol S.A. does not accept any liability for inappropriate use of the presented products.

PRECAUTIONS

1. Ensure that the parameters of the product described in its specification provide a safety margin for the appropriate operation of the device or system and never use the product in circumstances which exceed the parameters of the product.
2. Never touch any live parts of the device.
3. Ensure that the product has been connected correctly. An incorrect connection may cause malfunction, excessive heating or risk of fire.
4. In case of any risk of any serious material loss or death or injuries of humans or animals, the devices or systems shall be designed so to equip them with double safety system to guarantee their reliable operation.



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