

## ELECTRONIC TIME RELAYS, STAIRCASE LIGHTING CONTROLLER AND TEMPERATURE MONITOR RELAYS

Electronic time relays type EVR,  
Staircase lighting controller type ESA 11 and  
Thermistor protection type ETZM 6/1, 6/2, 6/3 and 6/4



## ELECTRONIC TIME RELAYS TYPE EVR

### Application, standards and installation

Electronic time relays EVR are used for operations in the field of automation and industrial plants, energetics, traffic etc. They could be used in installations with hard working conditions such as ships, cranes, heavy industry and similar since they are resistant to vibrations and high temperatures. The outlet relay with contacts of AgCdO provides stable control of almost all devices used in operating technics.

Electronic time relays are designed for fast and easy installation on standard rail support TH 35 - 7,5 according to DIN EN 50022 or installation with screws on standard plate according to DIN 46121. When they are used in rooms with increased humidity and dust, relays should be installed in closed cases.

Wiring of the relays is by flexible cores with cable shoe or with full cores made of copper, cross section from 1 to 2,5 mm<sup>2</sup>.

## STAIRCASE LIGHTING CONTROLLER TYPE ESA 11

### APPLICATION

The staircase lighting controller ESA11 is intended for time delayed switching of light.

### CONSTRUCTION

The staircase lighting controller ESA11 is assembled in an insulated housing made of polycarbonat with a compact width of 22,5mm which gives full protection to the personnel against touching of live parts according to VDE 01106T.100. The time is adjustable from 0,6 to 6 minutes with the help of a potentiometer mounted on the front of the relay.

A continous ON position of the light is reached by inserting a short circuiting conductor between the terminsls B1-B2. The integrated circuits inside the ESA11 are in C-MOS technology and all the components are carefully selected to provide high performances and reliability. the supply voltage is 220VAC. Other supply voltages will be offered on special demand.

### INSTALLATION

The staircase lighting controller ESA11 is intended for fast and easy installation on standard rail support TH35-7,5 according to DIN EN50022 or installation with screws 2xM4 on standard plate, according to DIN 46121. When they are used in rooms with increased humidity and dust the relays should be installed in closed cases. Wiring of the relays is by flexible cores with cable shoe or with full cores made of copper, cross section from 1 to 2,5mm<sup>2</sup>.

## TEMPERATURE MONITOR RELAYS TYPE ETZM

### Application, standards and installation

Relays ETZM in combination with thermistor probes (PTC) are devices for complete temperature protection of motors and other machines.

Thermistor motor protection consist of thermistor probes embeded in stator winding, with special characteristics of varying the electric resistance of temperature.

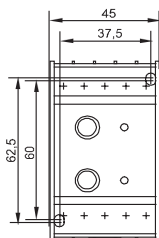
Relay ETZM is supervozir of the electrical resistance of the thermistor probes. Output relay switches off, after the resistance of the thermistor circuit, assumed certain value. Relays ETZM can not be adjusted, therefore the output function is determined entirely by the reference temperature of the thermistors.

Temperature "NIT" is chosen according to temperature class insulation of the motor.

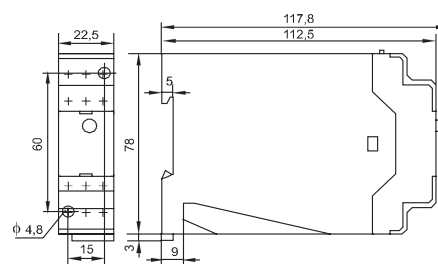
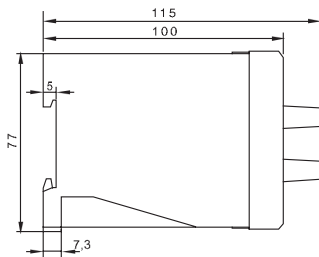
Relays ETZM are predicted for fast and simple installation with connectible cables (cross-section 1 to 2,5 mm<sup>2</sup>). They should be installed in dry and clean rooms. For use in areas with increased wetness, the relays should be built in enclosed boards.

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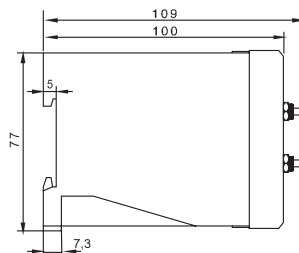
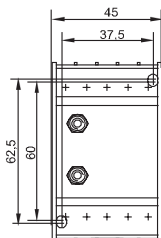
### DIMENSIONS (mm)



EVR

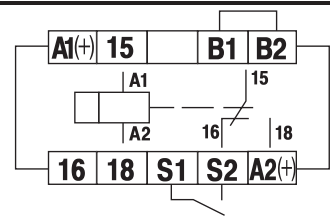
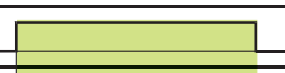
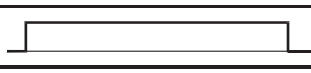
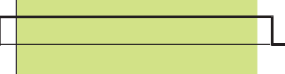



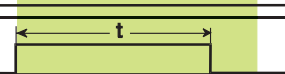
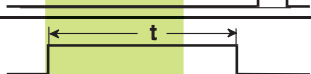
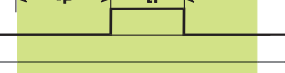
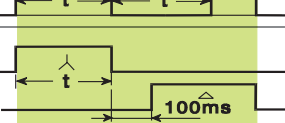
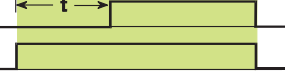
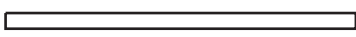
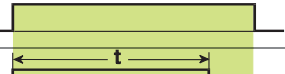
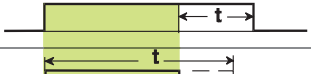
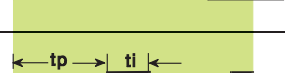


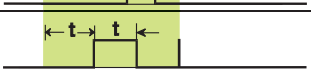


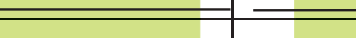

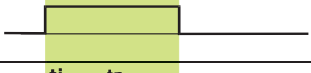


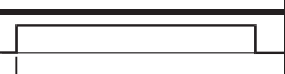

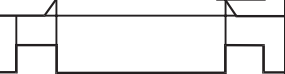

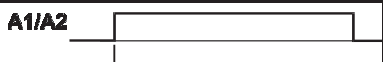
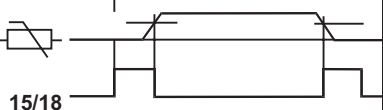

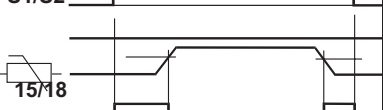

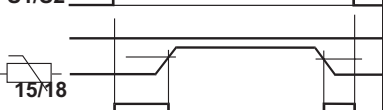


ESA 11




ETZM

# ELECTRONIC TIME RELAYS AND THERMISTOR PROTECTION

Number of function	Time function - EVR, EVRK, EVRU 	Timing chart		
		Start: with supply voltage	with external switch S1 - S2	
11 1PS <sup>4)</sup>	Delay on operate	15/18		
12	Delay on operate on de-energisation	15/18		
21 2PS <sup>4)</sup>	Pulse on energisation	15/18		
32	Two stage program, one cycle	15/18		
50	Flasher relay	15/18		
40	Star delta relay	17/18 17/28		
41	Delay on operate + instantaneous contact	15/18 25/28		
With short circuit connection B1 - B2		<b>B1/B2</b> 		
22	Delay on release	15/18		
23	Pulse on energisation	15/18		
33	Two stage program relay	15/18		
51	One stage program relay	15/18		
Without short circuit connection B1 - B2		<b>B1/B2</b> 		
22	Delay on release	15/18		
23	Pulse on energisation (instant. contact)	15/18		
33	Two stage program relay	15/18		
51	One stage program relay	15/18		
<b>ETZM - A</b>		<b>A1/A2</b> 		
Relay for thermistor protection of motors with automatic resetting		 <b>15/18</b> 		
<b>ETZM - R</b>		<b>A1/A2</b> 		
Relay for thermistor protection of motors with manual resetting		 <b>S1/S2</b>  <b>15/18</b> 		

<sup>4)</sup>1PS; 2PS with remote potentiometer control

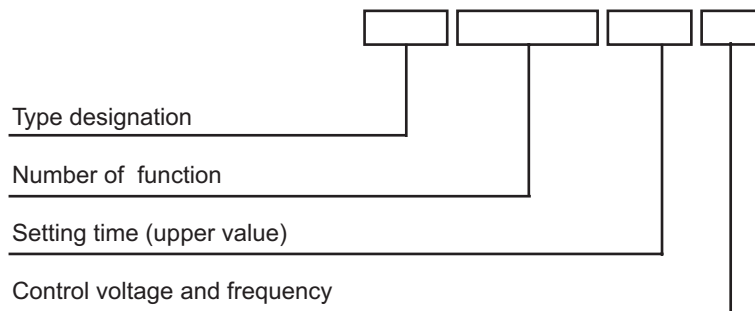
## ELECTRONIC TIME RELAYS, STAIRCASE LIGHTING CONTROLLER AND THERMISTOR PROTECTION

In conformity: IEC 255-2				
				
Type designation	<b>EVR</b>	<b>ESA 11</b>	<b>EVRU</b>	<b>ETZM</b>
Functions	11,1PS,12,21,2PS,22 23,32,33,40,41,50,51	11	11, 21, 22, 50	ETZMA ETZM R
Control voltage (V)	24 - 500	220	24 - 500	24 - 500
Rated insulation voltage (V)	250	250	250	250
Power consumption (VA)	3	5	4	3
Dielectric strength (V)	2000	2000	2000	2000
Setting time	0,06-0,6s    6-60s 0,6-6s        0,6-6min 2-20s          6-60min		0,06 -160s 0,15 min - 6h	
Permitted ambient temperature (°C)	-20 ... +55	-20 ... +55	-20 ... +55	-20 ... +55
Repetition error	<0,3% ± 2ms	<1%	<0,3% ± 2ms	
Timing error within ±10% Un	<1%	<1%	<1%	
Setting error (%)	<10	<10	<10	
Weight (kg)	0,30	0,20	0,35	0,25
CONTACTS DATA Max. thermal current I <sub>t</sub> (cosφ=1) Max. current I <sub>e</sub> for AC15/220V Max. current I <sub>e</sub> for DC13/220V Max. operating voltage	8 A 3 A 0.3 A 380 V~/250 V-		8 A 3 A 0.3 A 380 V~/250 V-	
Tripping thermistor resistance (Ω)				3000 ± 500
Reset thermistor resistance (KΩ)				1,5 - 2,3
Standard voltages (V)	380, 220, 110, 24, 50 Hz; 24V DC	220 V, 50 Hz	380, 220, 110, 24, 50 Hz; 24V DC	220,50 Hz

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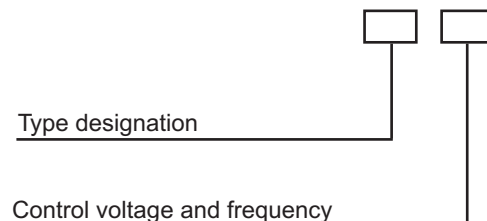
\* EVR 40 (Star delta relay) is activated by connecting the operating voltage on terminal connections A1/A2, and the contact 17/18 for motor connection in star is immediately switched on. After set time t contact 17/18 switches off, and after cca 100 ms the contact 17/28 switches on for connecting the motor in delta which stays switched on until the terminal connections A1/A2 are with operating voltage.

### ORDERING INSTRUCTIONS FOR ELECTRONIC TIME RELAYS



**Example:** EVR|32| 6 min| 220V, 50Hz

### ORDERING INSTRUCTION FOR THERMISTOR PROTECTION



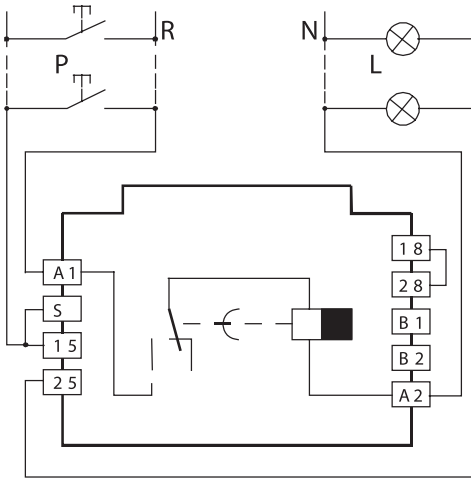
**Example:** ETZM-A|220V, 50Hz

# STAIRCASE LIGHTING CONTROLLER ESA 11

## Wiring diagrams

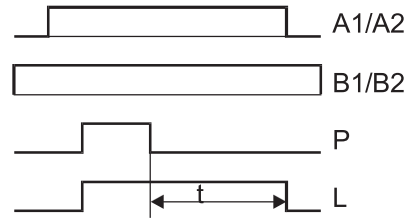
### EXTERNAL CONNECTIONS

#### CONNECTION WITH 4 WIRES

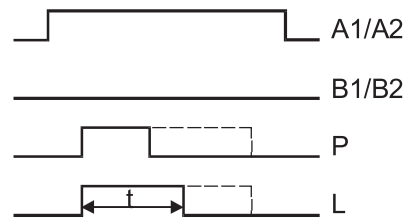


### TIMING CHARTS

#### WITH SHORTCIRCUITER B1-B2



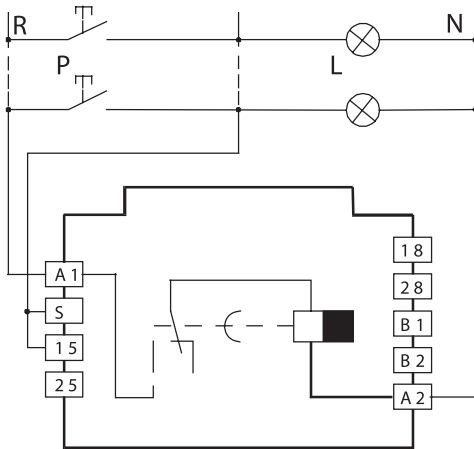
#### WITHOUT SHORTCIRCUITER B1-B2



R.. phase  
 N.. neutral  
 P.. momentary switch  
 L.. light

6

#### CONNECTION WITH 3 WIRES



#### CONNECTION WITH 3 WIRES

