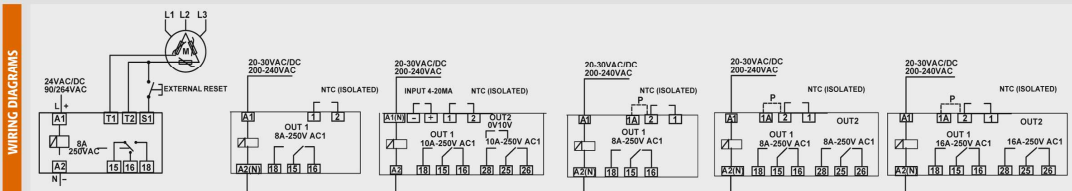


OCULUM - PROTECTION RELAYS



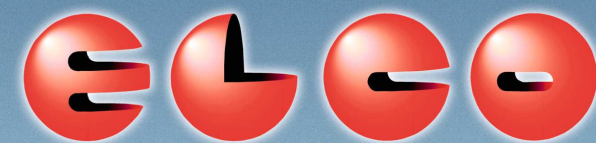
MPR PTC - MOTOR PROTECTION RELAY	ELTH17 DIGITAL TEMPERATURE CONTROLLERS	ELTH35 DIGITAL TEMPERATURE CONTROLLERS	ELTR171 ELECTRONIC TEMPERATURE CONTROLLER	ELTR172 ELECTRONIC TEMPERATURE CONTROLLER	ELTR352 ELECTRONIC TEMPERATURE CONTROLLER
----------------------------------------	----------------------------------------------	----------------------------------------------	-------------------------------------------------	-------------------------------------------------	-------------------------------------------------

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| <ul style="list-style-type: none"> - Protection relay for motor with PTC sensor control inside electric panel - Manual or automatic reset - Memory and failure set - Sensor test - Compact size - 1 Module (17,5 mm) - Output relay 1 pole changeover contact - DIN rail mounting | <ul style="list-style-type: none"> - Suitable for temperature control inside electric panel (fan control and heater control) - NTC probe input - 1 relay output - Compact size 1 Module (17,5 mm) - Power supply 24AC/DC or 240VAC/DC - DIN rail mounting - Digital adjustment of temperature (2 red digits) | <ul style="list-style-type: none"> Suitable for temperature control inside electric panel (fan control and heater control) - 2 independent temperature settings - NTC probe input - Second input 4-20mA (on request) - 1 or 2 relay outputs (Standard outputs) - 1 relay and 0-10V outputs (On request) - Compact size - 2 Modules (35 mm) - Power supply 24AC/DC or 240VAC - DIN rail mounting - Digital adjustment of temperature (2 red digits) | <ul style="list-style-type: none"> - Compact Size - 1 DIN Module (17,5mm) - Power supply : 20-24 AC/DC or 200-240VAC - Second input 4-20mA (on request) - Analog Temperature Adjustment - Suitable for temperature control inside electric panel (Fan control and resistor control) - One NTC probe input - 1 relay output x 8A | <ul style="list-style-type: none"> - Compact Size - 1 DIN Module (17,5 mm) - Power supply : 20-24 AC/DC - Din rail mounting - Din rail mounting - Analog Temperature Adjustment - Suitable for temperature control inside electric panel (Fan control and resistor control) - One or two independent NTC probe inputs - 2 relay outputs x 8A | <ul style="list-style-type: none"> - Compact Size - 2 DIN Modules (35 mm) - Power supply 20-24 AC/DC or 200-240VAC - Din rail mounting - Analog Temperature Adjustment - Suitable for temperature control inside electric panel (Fan control and resistor control) - One or two independent NTC probe inputs - 2 relay outputs x 16A |
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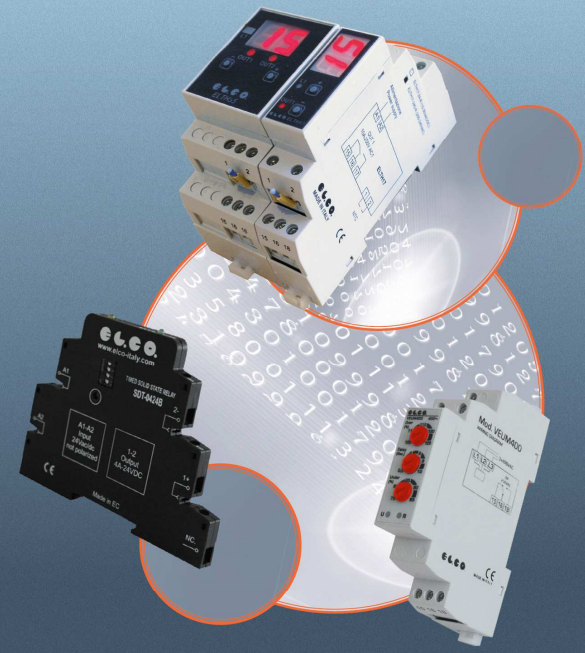


MPR	ELTH17-24-R	ELTH35-24-R	ELTR171-24	ELTR172-24-H-2V	ELTR352-240-H-2V
INPUT Power supply voltage: 24VAC/DC (MPR24); 90-264VAC (MPR230) Power consumption (max.AC): VA 14(2,7W)	ELECTRICAL DATA Power supply: 20-30VAC/DC; 200-240VAC INPUT Input: NTC (10k a 25°C)	ELECTRICAL DATA Power supply: 20-30VAC/DC; 200-240VAC INPUT Input 1: NTC (10k a 25°C) Input 2 (On request): 4-20mA	ELECTRICAL DATA Power supply: 20-30VAC/DC; 200-240VAC/DC INPUT Input: one NTC probe input (10k a 25°C)	ELECTRICAL DATA Power supply: 20-30VAC/DC; 200-240VAC/DC INPUT Input: one or two independent NTC probe inputs (10k a 25°C)	ELECTRICAL DATA Power supply: 20-30VAC/DC; 200-240VAC/DC INPUT Input: one or two independent NTC probe inputs (10k a 25°C)
OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Relay: 2 output relays with 1 pole changeover contact (8A) GENERAL FEATURES Control: ON/OFF Measurement range: NTC -20...+65°C probe on the controller / NTC -35...+99°C external probe Display: 2 red digital Operating-temperature: -20/+65°C Storage-temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP20 Relative humidity: 95RH% Weight: 55g Dimensions: 98x17,5x64mm	OUTPUT RELAY Relay: 2 output relays with 1 pole changeover contact (10A) Voltage (On request): 0-10V GENERAL FEATURES Control: ON/OFF Measurement range: NTC -20...+65°C probe on the controller / NTC -35...+99°C external probe Display: 2 red digital Operating-temperature: -20/+65°C Storage-temperature: -30/+70°C Relative humidity: 95RH% Dimensions: 98x35x64mm	OUTPUT RELAY Relay: 1 output relay with 1 pole changeover contact (8A) GENERAL FEATURES Control: ON/OFF Measurement range: NTC -20...+60°C Operating-temperature: -20/+65°C Storage-temperature: -30/+70°C Relative humidity: 30...95RH% Dimensions: 98x17,5x64mm	OUTPUT RELAY Relay: 2 relay outputs with 1 pole changeover contact (8A) GENERAL FEATURES Control: ON/OFF Measurement range: NTC -20...+60°C Operating-temperature: -20/+65°C Storage-temperature: -30/+70°C Relative humidity: 30...95RH% Dimensions: 98x17,5x64mm	OUTPUT RELAY Relay: 2 relay outputs with 1 pole changeover contact (16A) GENERAL FEATURES Control: ON/OFF Measurement range: NTC -20...+60°C Operating-temperature: -20/+65°C Storage-temperature: -30/+70°C Relative humidity: 30...95RH% Dimensions: 98x17,5x64mm

MPR24	ELTH17-24-R	ELTH35-24-R	ELTR171-24	ELTR172-24-H-2H	ELTR352-240-H-2H
VAC/DC: 24 MPR230 VAC: 90-264	VAC/DC: 24 ELTH17-240-R 200-240VAC/DC	Power supply: 20-30VAC/DC ELTH35-24-R (1 relay output) ELTH35-24-R-2R (2 relay outputs) ELTH35-24-R-V (1 relay output + 0/10V) Power supply: 200-240VAC ELTH35-240-R (1 relay output) ELTH35-240-R-2R (2 relay outputs) ELTH35-240-R-V (1 relay output + 0/10V) Add letter "I" at the end for second input 4-20mA, only for controllers with 2 outputs. Ex: ELTH35-24-R-2RI	Power supply: 20-30VAC/DC ELTR171-24 Power supply: 200-240VAC ELTR171-240	Power supply: 20-30VAC/DC ELTR172-24-H-2V ELTR172-24-H-2H	Power supply: 20-30VAC/DC ELTR352-24-H-2V ELTR352-24-H-2H Power supply: 200-240VAC ELTR352-240-H-2V ELTR352-240-H-2H



AUTOMATION UNDER CONTROL

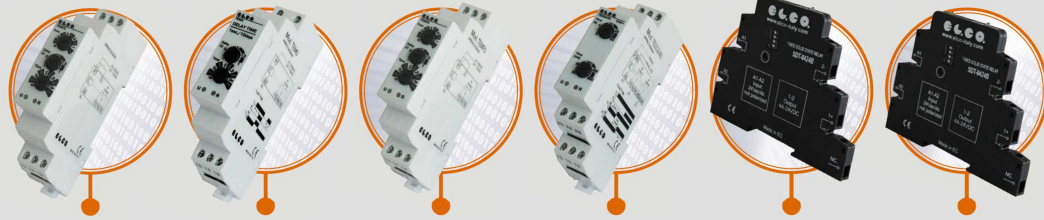


ELECTRONIC TIMERS & PROTECTION RELAYS



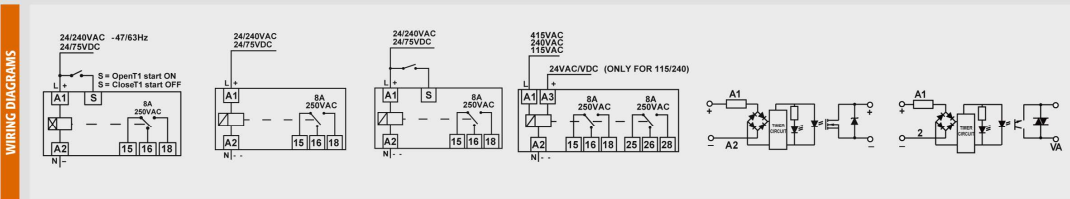
ELECTRONIC TIMERS AND PROTECTION RELAYS

TEMPO - ELECTRONIC TIMERS RELAY



TEMSA PROGRAMMABLE ASYMMETRICAL TIMER
TEMS MULTI SCALE TIMER
TEMFS MULTI-FUNCTION TIMER
TESD STAR-DELTA TIMER
SDT TIMER WITH DC SOLID STATE OUTPUT
SAT TIMER WITH AC SOLID STATE OUTPUT

- TEMSA**
 - Compact size
 - 1 Module (17,5 mm)
 - Output relay 1 pole changeover contact
 - DIN rail mounting
 - Time range 0.2sec - 100hr
 - 10 Time scales selectable
 - Universal power supply 24-75VDC/24-240VAC
- TEMS**
 - Compact size
 - 1 Module (17,5 mm)
 - Output relay 1 pole changeover contact
 - DIN rail mounting
 - Multi-scale
 - Universal power supply 24-75VDC/24-240VAC
- TEMFS**
 - Compact size
 - 1 Module (17,5 mm)
 - Output relay 1 pole changeover contact
 - DIN rail mounting
 - 10 functions selectable
 - Time range 0.1sec - 10 days
 - Universal power supply 24-75VDC/24-240VAC
- TESD**
 - Compact size
 - 1 Module (17,5 mm)
 - Output voltage led
 - Time range ST: 6-60 sec. TR: 0.2-300ms
 - Multi-Function : 4 timing functions
 - 4 time scales, from 0.1s up to 6h
 - Output voltage from 0 to 35VDC
 - 2500V input-output insulation
 - Width 6,5mm
 - DIN rail mounting
 - Comb for parallel interface connection
- SDT**
 - Non polarized input
 - Led input voltage
 - Output voltage led
 - 4A-24VDC timed output
 - Multi-Function : 4 timing functions
 - 4 time scale, from 0.1s up to 6h
 - Output voltage from 12 to 275VAC
 - 250V input-output insulation
 - Zero crossing commutation
 - Width 6,5mm
 - DIN rail mounting
 - Comb for parallel interface connection
- SAT**
 - Non polarized input
 - Led input voltage
 - Output voltage led
 - 3A-240VAC timed output
 - Multi-Function : 4 timing functions
 - 4 time scale, from 0.1s up to 6h
 - Output voltage from 12 to 275VAC
 - 250V input-output insulation
 - Zero crossing commutation
 - Width 6,5mm
 - DIN rail mounting
 - Comb for parallel interface connection



INPUT	INPUT	INPUT	INPUT	INPUT	INPUT
Power supply voltage DC: 24-75VDC Power supply voltage AC: 24-240VAC Power consumption (max.AC): VA 8,5(2,6W)	Power supply voltage DC: 24-75VDC Power supply voltage AC: 24-240VAC Power consumption (max.AC): VA 8,5(2,6W)	Power supply voltage DC: 24-75VDC Power supply voltage AC: 24-240VAC Power consumption (max.AC): VA 8,5(2,6W)	Power supply voltage DC: 24 VAC/DC (TESD115-TESD240) Power supply voltage AC: 115VAC (TESD115); 240VAC (TESD240); 415VAC (TESD415) Power consumption (max.AC): VA 3,9(0,8W)	Input voltage: 10-30VDC 10-24VAC	Input voltage: 10-30VDC 10-24VAC
OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Load voltage range: 0-35VDC Output current: 4A Minimum working current: 1mA	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO
GENERAL FEATURES Time range rotary switch: 0.2s-100h Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 65g Dimensions: 98 x17,5x64mm	GENERAL FEATURES Time range rotary switch: 0.1s-10days Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 60g Dimensions: 98 x17,5x64mm	GENERAL FEATURES Time range rotary switch: 0.1s-10days Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 65g Dimensions: 98 x17,5x64mm	GENERAL FEATURES Time delay (STAR): 6-60sec Time delay (TRANSITION): 0.2-300ms Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 65g Dimensions: 98 x17,5x64mm	GENERAL FEATURES Isolation voltage (input-output): 2500V Operating-temperature: -20/+80°C Storage temperature: -40/+100°C Protection degree: IP20 Dimensions: 100x6,5x78mm	GENERAL FEATURES Isolation voltage (input-output): 2500V Operating-temperature: -20/+80°C Storage temperature: -40/+100°C Protection degree: IP20 Dimensions: 100x6,5x78mm

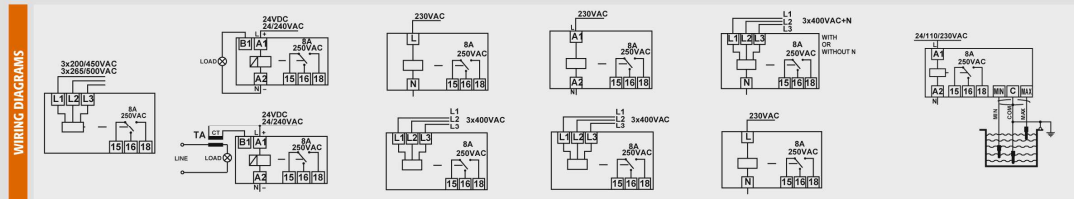
TEMSA:	TEMS:	TEMFS:	TESD115 VAC/DC:	SDT-0424B	SAT-0324B
VDC: 24-75 VAC: 24-240	VDC: 24-75 VAC: 24-240	VDC: 24-75 VAC: 24-240	VAC/DC: 24, VAC: 115 VAC/DC: 24, VAC: 240 VAC: 415	Input: VDC: 10-30 VAC: 10-24	Input: VDC: 10-30 VAC: 10-24

OCULUM - PROTECTION RELAYS



SFE2/4 • SFE2/4-500 PHASE SEQUENCE RELAY
CRE-5 CURRENT RELAY
VEU UNDER VOLTAGE RELAY
VEM OVER VOLTAGE RELAY
VEUM UNDER-OVER VOLTAGE RELAY PHASE SEQUENCE AND PHASE LOSS
LVE LIQUID LEVEL CONTROL

- SFE2/4**
 - Phase sequence / Rotation control
 - Universal three phase supply 3x200-450VAC
 - DIN rail mounting
 - Compact size - 1 Module (17,5 mm)
 - Output relay 1 pole changeover contact
- CRE-5**
 - Usable for current sensing from current transformers
 - Supply isn't galvanically isolated from measured current, it must be in the same phase
 - Time range 0-10sec
 - Current range AC/DC (0.25-5A +/-5%)
 - Universal power supply 24VDC/24-240VAC
 - Compact size - 1 Module (17,5 mm)
 - DIN rail mounting
 - Output relay 1 pole changeover contact
- VEU**
 - Monitor own supply and detects if one or more phases exceed the set under voltage trip levels
 - Measuring phase to phase voltage
 - Adjustment for under voltage trip level
 - Adjustment for time delay (from under voltage condition)
 - Compact size - 1 Module (17,5 mm)
 - DIN rail mounting
 - Output relay 1 pole changeover contact
- VEM**
 - Monitor own supply and detects if one or more phases exceed the set under voltage trip levels
 - Measuring phase to phase voltage
 - Adjustment for under voltage trip level
 - Adjustment for time delay (from over voltage condition)
 - Compact size - 1 Module (17,5 mm)
 - DIN rail mounting
 - Output relay 1 pole changeover contact
- VEUM**
 - Monitor own supply and detects if one or more phases exceed the set under over voltage trip levels
 - Measuring phase to phase voltage
 - Adjustment for under and over voltage trip level
 - Adjustment for time delay (from under or over voltage condition)
 - Phase sequence and phase loss (only for VEUM400 / VEUM400N)
 - Neutral loss (only for VEUM400N)
 - Compact size - 1 Module (17,5 mm)
 - DIN rail mounting
 - Output relay 1 pole changeover contact
- LVE**
 - Level control for all conductive liquid
 - Automatic reset
 - Sensitivity adjustable from 2,5K to 50K
 - DIN rail mounting
 - Output relay 1 pole changeover contact



INPUT	INPUT	INPUT	INPUT	INPUT	INPUT
Power supply voltage AC: 3x200-450VAC Power consumption (max.AC): VA 9(L/L1/L2) 1,2 (L3) W 1,9 Total	Power supply voltage DC: 24VDC Power supply voltage AC: 24-240 (+10%-15%) VAC Power consumption (max.AC): VA 0.25-5	Power supply voltage AC: 230VAC (VEU230); 3x400VAC (VEU400) Power consumption (max.AC): VA 13(1,5W) (VEU230); VA 15(2,2W) (VEU400)	Power supply voltage AC: 230VAC (VEM230); 3x400VAC (VEM400) Power consumption (max.AC): VA 13(1,5W) (VEM230); VA 15(2,2W) (VEM400)	Power supply voltage AC: 230VAC (VEUM230); 3x400VAC (VEUM400); 3x400+N (VEUM400N) Power consumption (max.AC): VA 13(1,5W) (VEUM230); VA 15(2,2W) (VEUM400-VEUM400N)	Power supply voltage AC: 24VAC (LVE24); 230VAC (LVE230) Power consumption (max.AC): VA 5.6
OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO	OUTPUT RELAY Rated current: 8A Rated operational voltage: 250VAC / 24VDC Changeover contact: 1 Au+AgCdO
GENERAL FEATURES Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 60g Dimensions: 98x17,5x64mm	GENERAL FEATURES Time delay: sec 0-10 T Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 65g Dimensions: 98x17,5x64mm	GENERAL FEATURES Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 60g Dimensions: 98x17,5x64mm	GENERAL FEATURES Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 60g Dimensions: 98x17,5x64mm	GENERAL FEATURES Operating-temperature: -10/+50°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 120g Dimensions: 98x36x64mm	GENERAL FEATURES Input probes isolation: kV 3(1.2 50uS) Number of probes: 2-3 Maximum cable length: 800mt Operating-temperature: -30/+70°C Storage temperature: -30/+70°C Isolation voltage: 4kV Protection degree: IP40 Relative humidity: 95RH% Weight: 120g Dimensions: 98x36x64mm

SFE 2/4:	CRE-5:	VEU230 VAC:	VEM230 VAC:	VEUM230 VAC:	LVE24 VAC:
3x200-450 SFE 2/4-500: 3x265-500VAC	VDC: 24 VAC: 24-240(+10%-15%)	230 VEU400 VAC: 3x400	230 VEM400 VAC: 3x400	230 VEUM400 VAC: 3x400 VEUM400N VAC: 3x400+N	24 LVE230 VAC: 230

FEATURES

WIRING DIAGRAMS

TECHNICAL SPECIFICATIONS

ORDERING CODES

FEATURES

WIRING DIAGRAMS

TECHNICAL SPECIFICATIONS

ORDERING CODES