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ETR4-51-A - Timing relay, star-delta, 50 ms, 1W, 3-60s, 24-240VAC/DC



031884 ETR4-51-A

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031884 ETR4-51-A

Timing relay, star-delta, 50 ms, 1W, 3-60s, 24-240VAC/DC

Alternate Catalog No.

XTTR6A60S51B

EL-Nummer (Norway)

4133308

Electronic timing relay according to IEC/EN 61812-1, VDE 0435, 22.5 mm wide, time range 3-60s, mechanical lifespan 30 * 10⁶, DIN top-hat rail mounting, any required mounting position, 24-240VAC/DC, star-delta switching, industry formfactor

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Delivery program

Product range

ETR4 timing relays

Basic function

Timer relays

Function

Star-delta switching

Changeover contact with a changeover time of 50 ms

Fixed timing function

Number of changeover contacts

1

Time range

3 - 60 s

Time range

3 - 60 s

Rated operational current [I_e]

AC-14 [I_e]300 V [I_e]

3 A

AC-14 [I_e]380 V 400 V 415 V [I_e]

3 A

AC-14 [I_e]

Value applies starting with release 001.

AC-15220 V 230 V 240 V [I_e]

3 A

AC-15300 V [I_e]

3 A

AC-15380 V 400 V 415 V [U_e]

3 A

AC-15

Value applies starting with release 001.

Voltage range [U_{LN}]

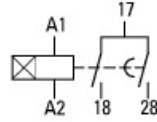
24 - 240 V AC, 50/60 Hz

24 - 240 V DC V

Width

22.5 mm

Terminal marking according to EN 50042



Technical data

General

Standards

Standard IEC/EN 61812

VDE 0435

Lifespan, mechanical AC operated [Operations]

30×10^6

Lifespan, mechanical DC operated [Operations]

30×10^6

Climatic proofing

Damp heat, constant, to IEC 60068-2-78

Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature Ambient temperature, storage

- 45 - + 85 °C

Ambient temperature Open

-25 - +60 °C

Ambient temperature Enclosed

- 25 - + 45 °C

Mounting position

As required

Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock, 20 ms Make contact

4 g

Degree of protection Terminals

IP20

Weight

0.1 kg

Terminal capacities Solid

1 x (0.5 - 2.5)

2 x (0.5 - 1.5) mm²

Terminal capacities Flexible with ferrule

1 x (0.5 - 2.5)

2 x (0.5 - 1.5) mm²

Terminal capacities Solid or stranded

1 x (20 - 14) AWG

Contacts

Rated impulse withstand voltage [U_{imp}]

4000 V AC

Rated impulse withstand voltage [U_{imp}]

6000 V AC

Value applies starting with release 001.

Overvoltage category/pollution degree

III/2

Rated insulation voltage [U_i]

400 V AC

Rated insulation voltage [U_i]

600 V AC

Value applies starting with release 001.

Rated operational voltage [U_e]

300 V AC

Rated operational voltage [U_e]

440 V AC

Value applies starting with release 001.

Safe isolation to EN 61140 between coil and auxiliary contacts

250 V AC
 Safe isolation to EN 61140 between the auxiliary contacts
 250 V AC
 Making capacity AC-14 $\cos \phi = 0.3$ 400 V
 48 A
 Making capacity AC-15 $\cos \phi = 0.3$ 220 V
 50 A
 Making capacity DC-11 L/R - 40 ms
 $1.1 \times I_e$
 Breaking capacity AC-14 $\cos \phi = 0.3$ 440 V
 3 A
 Breaking capacity AC-15 $\cos \phi = 0.3$ 220 V
 3 A
 Breaking capacity DC-11 L/R - 40 ms
 $1.1 \times I_e$
 Rated operational current [I_e] AC-14 [I_e] 380 V 400 V 415 V [I_e]
 3 A
 Rated operational current [I_e] AC-14 [I_e]
 Value applies starting with release 001.
 Rated operational current [I_e] AC-15 220 V [I_e]
 3 A
 Rated operational current [I_e] AC-15 220 V 230 V 240 V [I_e]
 3 A
 Rated operational current [I_e] DC-11 Note
 Making and breaking conditions to DC13, time constant as stated
 Rated operational current [I_e] DC-11 L/R max. 15 ms 24 V [I_e]
 1.5 A
 Rated operational current [I_e] DC-11 L/R max. 50 ms
 1.2 A
 Conv. thermal current [I_{th}]
 6 A
 Short-circuit rating without welding Note
 When supplied directly from mains or transformer > 1000 VA
 Short-circuit rating without welding Max. fuse, make contacts
 6 A gG/gL
 Short-circuit rating without welding Max. fuse, break contacts
 6 A gG/gL
 Short-circuit rating without welding Max. overcurrent protective device, 220/230 V
 FAZ-B4/1-HI Type
 Magnet systems
 Power consumption Flick-up AC
 2 VA
 Power consumption Sealing AC
 2 VA
 Power consumption Flick-up DC
 1.8 W
 Power consumption Sealing DC
 1.8 W
 Duty factor
 100 % DF
 Maximum operating frequency
 4000 Ops/h
 Minimum command time AC
 50 ms
 Minimum command time DC
 30 ms
 Repetition accuracy (deviation)
 $\square 0.5 \%$
 Recovery time (after 100% time delay)
 70 ms
 Contact changeover time [t_u]
 50 ms
 Electromagnetic compatibility (EMC)
 Electrostatic discharge (ESD) applied standard
 IEC/EN 61000-4-2
 Electrostatic discharge (ESD) Air discharge
 8 kV
 Electrostatic discharge (ESD) Contact discharge
 6 kV

Electromagnetic fields (RFI) applied standard
 IEC/EN 61000-4-3
 Electromagnetic fields (RFI)
 80 - 1000 MHz: 10
 1.4 - 2 GHz: 3
 2.0 - 2.7 GHz: 1 V/m
 Radio interference suppression
 EN 55011, Class B (conducted)
 EN 55011, Class B (radiated)
 Burst
 Supply cables: 2
 Signal cables: 1
 according to IEC/EN 61000-4-4 kV
 power pulses (Surge)
 2 kV (symmetrical)
 4 kV (asymmetrical)
 according to IEC/EN 61000-4-5
 Immunity to line-conducted interference to (IEC/EN 61000-4-6)
 10 V

Design verification as per IEC/EN 61439

Technical data for design verification
 Rated operational current for specified heat dissipation [I_r]
 6 A
 Heat dissipation per pole, current-dependent [P_{vid}]
 1.4 W
 Equipment heat dissipation, current-dependent [P_{vid}]
 0 W
 Static heat dissipation, non-current-dependent [P_{vs}]
 1.8 W
 Heat dissipation capacity [P_{diss}]
 0 W
 Operating ambient temperature min.
 -25 °C
 Operating ambient temperature max.
 +60 °C

IEC/EN 61439 design verification

10.2 Strength of materials and parts 10.2.2 Corrosion resistance
 Meets the product standard's requirements.
 10.2 Strength of materials and parts 10.2.3.1 Verification of thermal stability of enclosures
 Meets the product standard's requirements.
 10.2 Strength of materials and parts 10.2.3.2 Verification of resistance of insulating materials to normal heat
 Meets the product standard's requirements.
 10.2 Strength of materials and parts 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects
 Meets the product standard's requirements.
 10.2 Strength of materials and parts 10.2.4 Resistance to ultra-violet (UV) radiation
 Meets the product standard's requirements.
 10.2 Strength of materials and parts 10.2.5 Lifting
 Does not apply, since the entire switchgear needs to be evaluated.
 10.2 Strength of materials and parts 10.2.6 Mechanical impact
 Does not apply, since the entire switchgear needs to be evaluated.
 10.2 Strength of materials and parts 10.2.7 Inscriptions
 Meets the product standard's requirements.
 10.3 Degree of protection of ASSEMBLIES
 Does not apply, since the entire switchgear needs to be evaluated.
 10.4 Clearances and creepage distances
 Meets the product standard's requirements.
 10.5 Protection against electric shock
 Does not apply, since the entire switchgear needs to be evaluated.
 10.6 Incorporation of switching devices and components
 Does not apply, since the entire switchgear needs to be evaluated.
 10.7 Internal electrical circuits and connections
 Is the panel builder's responsibility.
 10.8 Connections for external conductors
 Is the panel builder's responsibility.
 10.9 Insulation properties 10.9.2 Power-frequency electric strength
 Is the panel builder's responsibility.

10.9 Insulation properties 10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

10.9 Insulation properties 10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

10.10 Temperature rise

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

Relays (EG000019) / Timer relay (EC001439)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Relay and socket /

Timed relay (ecl@ss10.0.1-27-37-16-05 [AKF092013])

Type of electric connection

Screw connection

Function delay-on energization

No

Function delay on de-energization

No

Function floating contact on energization

No

Function floating contact on de-energization

No

Function star-delta

Yes

Function pulse shaping

No

Function flashing, starting with pause, fixed time

No

Function flashing, starting with pulse, fixed time

No

Clock function, starting with pause, variable

No

Clock function, starting with pulse, variable

No

With plug-in socket

No

Remote operation possible

No

Suitable for remote control

No

Pluggable on auxiliary contact block

No

Rated control supply voltage U_s at AC 50HZ

24 - 240 V

Rated control supply voltage U_s at AC 60HZ

24 - 240 V

Rated control supply voltage U_s at DC

24 - 240 V

Voltage type for actuating

AC/DC

Nominal current

3 A

Time range

3 - 60 s

Number of outputs, undelayed, normally closed contact

0

Number of outputs, undelayed, normally open contact

1

Number of outputs, undelayed, change-over contact

0

Number of outputs, delayed, normally closed contact

0

Number of outputs, delayed, normally open contact
1
 Number of outputs, delayed, change-over contact
0
 Outputs, reversible delayed/undelayed
No
 With semiconductor output
No
 Suitable for DIN rail (top hat rail) mounting
Yes
 Suitable for front mounting
No
 Width
23 mm
 Height
83 mm
 Depth
103 mm

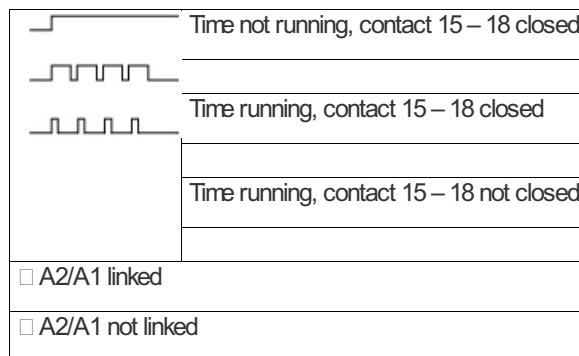
Approvals

Product Standards
 IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14; CE marking
 UL File No.
 E29184
 UL Category Control No.
 NKCR
 CSA File No.
 12528
 CSA Class No.
 3211-03
 North America Certification
 UL listed, CSA certified
 Degree of Protection
 IEC: IP20, UL/CSA Type: -

Characteristics

Flow diagram for timing functions

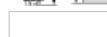
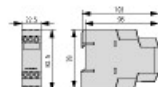
LED legend



51 Star-delta



Dimensions



Applies to release 001 and higher

CAD data

- [Product-specific CAD data \(Web\)](#)

- [3D Preview](#)
(Web)

DWG files

- [DA-CD-etr4_51](#)
File
(Web)

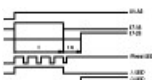
edz files

- [DA-CE-ETN.ETR4-51-A](#)
File
(Web)

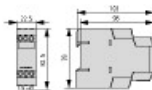
Step files

- [DA-CS-etr4_51](#)
File
(Web)

Characteristic curve

- 
[250U018](#)
Coordinate visualization
Flow diagram star-delta function

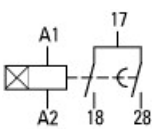
Dimensions single product

- 
[250X003](#)
Line drawing
Timing relay, contactor monitoring device
- [2527DIM-3](#)
Line drawing
ETR4 Electronic Timing Relays

3D drawing

- [2527DRW-19](#)
Line drawing
ETR4 Electronic Timing Relays

Wiring diagram

- 
[250S005](#)
Line drawing
Star-delta timing relays

Product photo

- 
[2327PIC-48](#)

Photo

Instruction Leaflet

- [ETR4 Timing relay, star-delta relay, multifunction relay \(IL04910001Z\)](#)
Asset
former AWA2527-1485
(PDF, 08/2019, multilingual)

Symbol

- [0000SPC-180](#)
Graphic
Germanischer Lloyd approval for Germany (color logo)

Declaration of Conformity

UK

- [Electronic timing relay \(DA-DC-00003970\)](#)
Asset
(PDF)

Download-Center

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