Specifications

Eaton 031887

Catalog Number: 031887

Eaton Moeller® series ETR4 Timing relay, 1W, 0.05s-100h, multi-function, 400VAC



General specifications

Product Name
Eaton Moeller® series ETR4 Timing relay

Catalog Number
031887

EAN
4015080318873

Product Length/Depth
103 mm

Product Height
83 mm

Product Width
23 mm

Product Weight
0.109 kg

Certifications
VDE 0435
IEC/EN 61000-4-3
Standard IEC/EN 61812
IEC/EN 61000-4-2

Powering Business Worldwide

Features & Functions

Electric connection type

Screw connection

Functions

Clock function, starting with pulse, variable
Fleeting contact on de-energization
Multi-functional
Adjustable timing function
Delay on de-energization
Fleeting contact on energization
Flashing, pulse initiating
On- and Off-delayed
Delay-on energization
Flashing, starting with pause, fixed time
Outputs, reversible delayed/undelayed
Flashing, starting with pulse, fixed time
On-delayed
Off-delayed
Pulse generating
Clock function, starting with pause, variable
Pulse shaping
Pulse forming

General

Degree of protection

Terminals: IP20
IP20

Lifespan, mechanical

30,000,000 Operations (DC operated)
30,000,000 Operations (AC operated)

Mounting position

As required

Number of contacts (change-over contacts)

1

Overvoltage category

III

Pollution degree

2

Product category

ETR4 timing relays

Rated impulse withstand voltage (Uimp)

6000 V AC

Shock resistance

4 g, Make contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms

Suitable for

DIN rail (top hat rail) mounting

Terminal capacity

2 x (0.5 - 1.5) mm², solid
1 x (0.5 - 2.5) mm², solid
1 x (0.5 - 2.5) mm², flexible with ferrule
1 x (20 - 14) AWG, solid or stranded
2 x (0.5 - 1.5) mm², flexible with ferrule

Time range - min

0.05 s

Time range - max

360000 s

Type

Timer relay

Voltage type

AC

Climatic environmental conditions

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

60 °C

Ambient operating temperature (enclosed) - min

-25 °C

Ambient operating temperature (enclosed) - max

45 °C

Ambient storage temperature - min

-45 °C

Ambient storage temperature - max

85 °C

Climatic proofing

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

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

Electro magnetic compatibility

Air discharge

8 kV

Burst impulse

1 kV, Signal cable

According to IEC/EN 61000-4-4

2 kV, Supply cable

Contact discharge

6 kV

Electromagnetic fields

3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3)

1 V/m at 2.0 - 2.7 GHz (according to IEC EN 61000-4-3)

10 V/m at 80 - 1000 MHz (according to IEC EN 61000-4-3)

Immunity to line-conducted interference

10 V (according to IEC/EN 61000-4-6)

Radio interference class

Class B (EN 55011, conducted)

Class B (EN 55011, radiated)

Surge rating

2 kV, symmetrical, power pulses (Surge), EMC

4 kV, asymmetrical, power pulses (Surge), EMC

According to IEC/EN 61000-4-5, power pulses (Surge), EMC

Electrical rating

Conventional thermal current ith of auxiliary contacts (1-pole, open)

6 A

Mains voltage tolerance

400 V AC (at 50/60 Hz)

Nominal current

3 A

Rated breaking capacity

3 A at AC-15 (cos ϕ = 0.3 220 V)

3 A at AC-14 (cos ϕ = 0.3 440 V)

1.1 x I_e (DC-11 L/R - 40 ms)

Rated insulation voltage (Ui)

600 V

Rated making capacity

Magnet system

Command time

50 ms, AC

Contact changeover time

4 ms

Duty factor

100 %

Operating frequency

4000 Operations/h

Pick-up voltage

0.85 - 1.1 V AC x Uc

Power consumption

0.5 VA at AC (Sealing power)

0.5 VA at AC (Pick-up power)

1.1 x I_e (DC-11 L/R - 40 ms)

48 A (AC-14 cos ϕ = 0.3 400 V)

50 A (AC-15 cos ϕ = 0.3 220 V)

Rated operational current (Ie)

3 A at AC-14, 440 V

3 A at AC-14, 380 V 400 V 415 V

1.5 A at DC-11, 24 V

3 A at AC-15, 380 V 400 V 415 V

3 A at AC-15, 220 V 230 V 240 V

1.2 A at DC-11, L/R max. 50 ms

Rated operational voltage (Ue) at AC - max

440 V

Safe isolation

250 V AC, Between coil and auxiliary contacts, According to EN 61140

250 V AC, Between auxiliary contacts, According to EN 61140

Short-circuit protection rating

Max. 6 A gG/gL, Fuse, Short-circuit rating without welding, Contacts

Max. 6 A gG/gL, fuse, Without welding, Contacts

Rated control supply voltage (Us) at AC, 50 Hz - min

400 V

Rated control supply voltage (Us) at AC, 50 Hz - max

400 V

Rated control supply voltage (Us) at AC, 60 Hz - min

400 V

Rated control supply voltage (Us) at AC, 60 Hz - max

400 V

Rated control supply voltage (Us) at DC - min

0 V

Rated control supply voltage (Us) at DC - max

0 V

Recovery time

70 ms (after 100 % time delay)

Repetition accuracy

≤ 0.5 % (deviation)

Design verification

Equipment heat dissipation, current-dependent Pvid

0 W

Heat dissipation capacity Pdiss

0 W

Heat dissipation per pole, current-dependent Pvid

1.4 W

Rated operational current for specified heat dissipation (In)

6 A

Static heat dissipation, non-current-dependent Pvs

0.5 W

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

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.

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

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.

Resources

Brochures

EMR6 - EMT6 - ETR4 brochure

Catalogs

eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf

Characteristic curve

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-008.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-007.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-002.eps

eaton-timers-diagram-timing-relay-characteristic-curve-006.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-004.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-006.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-005.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve.eps

eaton-timers-diagram-etr4-timing-relay-characteristic-curve-003.eps

Declarations of conformity

DA-DC-00003970.pdf

DA-DC-00003565.pdf

Drawings

eaton-electronic-timers-relay-etr4-timing-relay-dimensions.eps

eaton-timers-contactor-etr4-timing-relay-dimensions.eps

eaton-electronic-timers-relay-etr4-timing-relay-3d-drawing-002.eps

eaton-general-m22-symbol.eps

eCAD model

ETN.031887.edz

Installation instructions

eaton-etr4-timing-relay-instruction-leaflet-il049003zu.pdf

mCAD model

DA-CD-etr4_69

DA-CS-etr4_69

Wiring diagrams

eaton-timers-relay-etr2-timing-relay-wiring-diagram.eps

eaton-timers-relay-etr2-timing-relay-wiring-diagram-002.eps

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.

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