031891
ETR4-69-A

DELIVERY PROGRAM

Product range
ETR4 timing relays

Basic function
Timer relays

Function
Multi-functional
On-delayed
Off-delayed
Fleeting contact on energization
Fleeting contact on de-energization
Flashing, pulse initiating
On- and Off-delayed
Pulse forming
Pulse generating

Adjustable timing functions

Number of changeover contacts
1

Time range

0.05 s - 100 h

Time range
0.05 - 1 s
0.15 - 3 s
0.5 - 10 s
1.5 - 30 s
5 - 100 s
15 - 300 s
1.5 - 30 min
15 - 300 min
1.5 - 30 h
5 - 100 h

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-15
220 V 230 V 240 V [I_e]
3 A

AC-15
300 V [I_e]
3 A

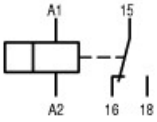
AC-15
380 V 400 V 415 V [I_e]
3 A

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



Terminal marking according to EN 50042

TECHNICAL DATA

General

Standards
Standard IEC/EN 61812
VDE 0435

Lifespan, mechanical
AC operated [Operations]
30 x 10^6

Lifespan, mechanical
DC operated [Operations]
30 x 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) mm^2

Terminal capacities
Flexible with ferrule
1 x (0.5 - 2.5)
2 x (0.5 - 1.5) mm^2

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 ϕ = 0.3 400 V
48 A

Making capacity
AC-15 cos ϕ = 0.3 220 V
50 A

Making capacity
DC-11 L/R - 40 ms
1.1 x I_e

Breaking capacity
AC-14 cos ϕ = 0.3 440 V
3 A

Breaking capacity
AC-15 cos ϕ = 0.3 220 V
3 A

Breaking capacity
DC-11 L/R - 40 ms
1.1 x 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--14
440 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
Pick-up AC
2 VA

Power consumption
Sealing AC
2 VA

Power consumption
Pick-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)
□ 0.5 %

Recovery time (after 100% time delay)
70 ms

Contact changeover time [t_u]
4 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_n]

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
Yes

Function delay on de-energization
Yes

Function floating contact on energization
Yes

Function floating contact on de-energization
Yes

Function star-delta
No

Function pulse shaping
Yes

Function flashing, starting with pause, fixed time
Yes

Function flashing, starting with pulse, fixed time
Yes

Clock function, starting with pause, variable
Yes

Clock function, starting with pulse, variable
Yes

With plug-in socket
No

Remote operation possible
No

Suitable for remote control
No

Pluggable on auxiliary contact block
No

Rated control supply voltage Us at AC 50HZ
24 - 240 V

Rated control supply voltage Us at AC 60HZ
24 - 240 V

Rated control supply voltage Us at DC
24 - 240 V

Voltage type for actuating
AC/DC

Nominal current

3 A

Time range
0.05 - 360000 s

Number of outputs, undelayed, normally closed contact
0

Number of outputs, undelayed, normally open contact
0

Number of outputs, undelayed, change-over contact
0

Number of outputs, delayed, normally closed contact
0

Number of outputs, delayed, normally open contact
0

Number of outputs, delayed, change-over contact
0

Outputs, reversible delayed/undelayed
Yes

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

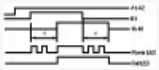
- Time not running, contact 15 – 18 closed
- Time running, contact 15 – 18 closed
- Time running, contact 15 – 18 not closed
- A2/A1 linked

□ A2/A1 not linked

11 On-delayed

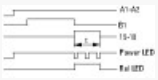
12 Off-delayed

16 On- and Off-delayed



21 Fleeting contact on energization

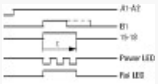
22 Fleeting contact on de-energization



42 Flashing, pulse initiating

81 Pulse generating

82 Pulse shaping



On-Off function

DIMENSIONS

Applies to release 001 and higher

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