184770
EMR6-AWN280-D-1

Overview | Specifications | Resources

Delivery program
Technical data
Design verification as per IEC/EN 61439
Technical data ETIM 7.0
Approvals
Dimensions

DELIVERY PROGRAM

Product range
EMR Measuring and monitoring relays

Basic function
Phase monitoring relays

Function
Multi-functional

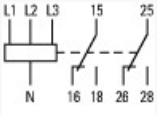
Power supply from the measuring circuit
On-delay/off-delay: none = 0 or adjustable between 0.1 - 30 s
Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages
Suitable for single-phase networks as well.

Monitoring voltage per phase [U_N]
180 - 280 V AC, 50/60 Hz (L1-N) V AC

Monitoring of
Phase sequence (can be deactivated)
Phase failure
Overvoltage

Undervoltage
Imbalance
Neutral cable break

Contact sequence



Supply voltage
180 - 280 V AC, 50/60 Hz

Width
22.5 mm

TECHNICAL DATA

General

Standards
IEC, UL, CSA, CCC, GL

Lifespan, mechanical [Operations]
30 x 10^6

Climatic proofing
Damp heat, cyclical to IEC 60068-2-30: 24 h cycle,
55° C, 93% relative humidity, 96 h

Ambient temperature
Operation
Operating ambient temperature min.
-25 °C

Ambient temperature
Operation
Operating ambient temperature max.
+60 °C

Ambient temperature
Storage
- 40 - 85 °C

Mounting position

As required

Shock resistance
Class 2

Degree of protection
Terminals
IP20

Degree of protection
Enclosures
IP50

Terminal capacities
Solid
1 x 0.5-2.5 (1 x 18-14 AWG) mm^2

Terminal capacities
Flexible with ferrule
2 x 0.5-1.5 (2 x 18-16 AWG) mm^2

Standard screwdriver
5.5 x 0.8 mm

Tightening torque
0.6 - 0.8 Nm

Fixing
Snap fixing, top-hat rail IEC/EN 60715

MTBF (mean time between failures)
382977 h

Contacts

Rated impulse withstand voltage [U_{imp}]
4000 V AC

Overvoltage category/pollution degree
III/3

Power supply

Supply voltage

180 - 280 V AC, 50/60 Hz

Voltage tolerance
0.85 - 1.1 x U_c

Power consumption
3 VA

Rated frequency [f]
50 - 60 Hz

Duty factor
100 % DF

Timing cycle

Response delay time
0.2 s

Reset delay/Off-delay time
Adjustable from 0.1 – 30 s

Time error within supply voltage
0.5 %

Time error within temperature range
0.06 %/°C

Measuring circuits

Frequency
50/60 ± 10 % Hz

Hysteresis
0…5 %

Frequency
50/60 ± 10 % Hz

Measuring cycle
50 ms

Temperature error

0.06 %/°C

Error within supply voltage
0.5 %

Status indication

Supply voltage
LED yellow

Overvoltage
LED red: F1 on

Undervoltage
LED red: F2 on

Status indicator (LED)
Yellow, solid: Supply voltage
Yellow, solid (R): Relay energized
Yellow, flashing (R/T): Delay time running
Red, solid (F1 & F2): Imbalance
Red, solid (F1): Overvoltage
Red, solid (F2): Undervoltage
Red: F1 solid, F2 flashing: Phase failure
Red, F1 solid & F2 flashing: Open neutral conductor
Red, flashing (F1 & F2 alternating): Phase sequence fault

Relay output contacts

Rated operational voltage [U_e]
250 V AC

Rated operational current [I_e]
AC-12 at 230 V [I_e]
4 A

Rated operational current [I_e]
AC-15 with 230 V [I_e]
3 A

Rated operational current [I_e]
DC-12 at 24 V [I_e]
4 A

Rated operational current [I_e]

DC-13 at 24 V [I_e]
2 A

Minimum Switching capacity
10 mA / 24 V

Lifespan, electrical (AC-12/230 V/4 A) [Operations]
Lifespan, electrical [Operations]
0.1 x 10^6

Short-circuit rating
max. fuse [Fast/gL]
5 A

Electromagnetic compatibility (EMC)

Electromagnetic compatibility
IEC/EN 60947-6-2

ESD [Air/contact discharge]
IEC/EN 61000-4-2 level 3 kV

HF-immunity to radiation
IEC/EN 61000-4-3 level 3

Burst
IEC/EN 61000-4-4 level 3

Surge
IEC/EN 61000-4-5 Level 4

HF-immunity to line-conducted interference
IEC/EN 61000-4-6 level 3

DESIGN VERIFICATION AS PER IEC/EN 61439

Operating ambient temperature min.
-25 °C

Operating ambient temperature max.
+60 °C

TECHNICAL DATA ETIM 7.0

Relays (EG000019) / Phase monitoring relay (EC001441)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Monitoring equipment (low-voltage switch technology) / Asymmetry monitoring equipment (ecl@ss10.0.1-27-37-18-03 [AKF097014])

Type of electric connection
Screw connection

With detachable clamps
No

Rated control supply voltage Us at AC 50HZ
180 - 280 V

Rated control supply voltage Us at AC 60HZ
180 - 280 V

Rated control supply voltage Us at DC
0 - 0 V

Voltage type for actuating
AC

Phase sequence monitoring
Yes

Phase failure detection
Yes

Function under voltage detection
Yes

Function over voltage detection
Yes

Phase imbalance monitoring
Yes

Voltage measurement range
180 - 280 V

Min. adjustable delay-on energization time
0.1 s

Max. permitted delay-on energization time
30 s

Min. adjustable off-delay time
0.1 s

Max. permitted off-delay time
30 s

Number of contacts as normally closed contact
0

Number of contacts as normally open contact
0

Number of contacts as change-over contact
2

Width
22.5 mm

Height
85.6 mm

Depth
104.6 mm

APPROVALS

Product Standards
IEC 255-6; UL 508; CSA-22.2 No. 14-05; CE marking

UL File No.
E29184

UL Category Control No.
NKCR, NKCR7

CSA File No.
UL report valid

CSA Class No.
3211-03

North America Certification
UL listed, certified by UL for use in Canada

DIMENSIONS