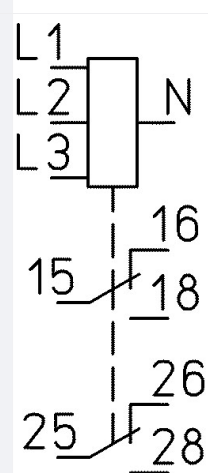




Phase monitoring relays, Multi-functional, 90 - 170 V AC, 50/60 Hz

Part no. EMR6-AWN170-E-1
Catalog No. 184768
Alternate Catalog No. EMR6-AWN170-E-1
EL-Nummer (Norway) 4101964

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 Automatic phase sequence correction (can be disabled) Suitable for single-phase networks as well. |
| Monitoring voltage per phase | U _N | V AC | 90 - 170 V AC, 50/60 Hz |
| Monitoring of | | | Phase sequence (can be deactivated) Phase failure Overvoltage Undervoltage Imbalance Neutral cable break |
| Contact sequence | | |  |
| Supply voltage | | | 90 - 170 V AC, 50/60 Hz |
| Width | | mm | 22.5 |

Technical data

General

| | | | |
|------------------------------------|------------|-------------------|---|
| Standards | | | IEC, UL, CSA, CCC, GL |
| Lifespan, mechanical | Operations | x 10 ⁶ | 30 |
| Climatic proofing | | | Damp heat, cyclical to IEC 60068-2-30: 24 h cycle, 55° C, 93% relative humidity, 96 h |
| Ambient temperature | | | |
| Operation | | °C | |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | + 60 |
| Storage | | °C | - 40 - 85 |
| Mounting position | | | As required |
| Shock resistance | | | Class 2 |
| Degree of protection | | | |
| Terminals | | | IP20 |
| Enclosures | | | IP50 |
| Terminal capacities | | mm ² | |
| Solid | | mm ² | 1 x 0.5-2.5 (1 x 18-14 AWG) |

| | | | |
|-----------------------------------|--|-----------------|--|
| Flexible with ferrule | | mm ² | 2 x 0.5-1.5 (2 x 18-16 AWG) |
| Standard screwdriver | | mm | 5.5 x 0.8 |
| Tightening torque | | Nm | 0.6 - 0.8 |
| Fixing | | | Snap fixing, top-hat rail IEC/EN 60715 |
| MTBF (mean time between failures) | | | 382977 h |

Contacts

| | | | |
|---------------------------------------|------------------|------|-------|
| Rated impulse withstand voltage | U _{imp} | V AC | 4000 |
| Overvoltage category/pollution degree | | | III/3 |

Power supply

| | | | |
|-------------------|---|------------------|-------------------------|
| Supply voltage | | | 90 - 170 V AC, 50/60 Hz |
| Voltage tolerance | | x U _c | 0.85 - 1.1 |
| Power consumption | | VA | 3 |
| Rated frequency | f | Hz | 50 - 60 |
| Duty factor | | % DF | 100 |

Timing cycle

| | | | |
|-------------------------------------|--|------|--------------------------|
| Response delay time | | s | 0.2 |
| Reset delay/Off-delay time | | s | Adjustable from 0.1 – 30 |
| Time error within supply voltage | | % | 0.5 |
| Time error within temperature range | | %/°C | 0.06 |

Measuring circuits

| | | | |
|-----------------------------|--|------|--------------|
| Frequency | | Hz | 50/60 ± 10 % |
| Hysteresis | | % | 0 ... 5 |
| Frequency | | Hz | 50/60 ± 10 % |
| Measuring cycle | | ms | 50 |
| Temperature error | | %/°C | 0.06 |
| Error within supply voltage | | % | 0.5 |

Status indication

| | | | |
|------------------------|--|--|---|
| Supply voltage | | | LED green: R on |
| Output relay energized | | | LED green: R flashes |
| Overvoltage | | | LED red: F1 on |
| Undervoltage | | | LED red: F2 on |
| Status indicator (LED) | | | Green, solid: Supply voltage Yellow, solid: Relay energized Yellow, flashing: 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 | V AC | 250 |
| Rated operational current | I _e | A | |
| AC-12 at 230 V | I _e | A | 4 |
| AC-15 with 230 V | I _e | A | 3 |
| DC-12 at 24 V | I _e | A | 4 |
| DC-13 at 24 V | I _e | A | 2 |
| Lifespan, electrical (AC-12/230 V/4 A) | Operations | x 10 ⁶ | |
| Lifespan, electrical | Operations | x 10 ⁶ | 0.1 |
| Short-circuit rating | | | |
| max. fuse | Fast/gL | A | 5 |

Electromagnetic compatibility (EMC)

| | | | |
|--|-----------------------|----|--------------------------|
| Electromagnetic compatibility | | | IEC/EN 60947-6-2 |
| ESD | Air/contact discharge | kV | IEC/EN 61000-4-2 level 3 |
| 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

| | | | |
|--|--|----|--|
| Technical data for design verification | | | |
| Operating ambient temperature min. | | °C | -25 |
| Operating ambient temperature max. | | °C | 60 |
| IEC/EN 61439 design verification | | | |
| 10.9 Insulation properties | | | |
| 10.9.4 Testing of enclosures made of insulating material | | | Is the panel builder's responsibility. |

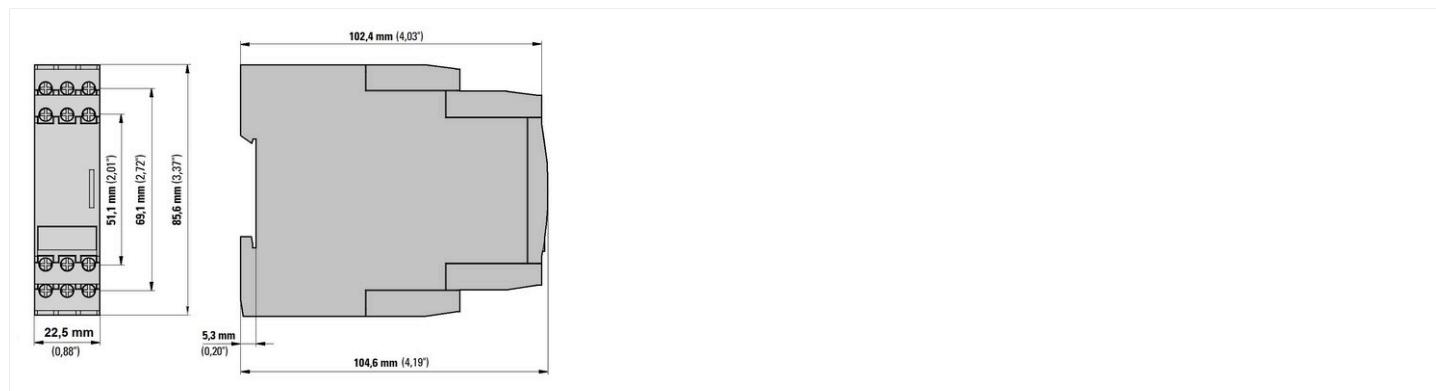
Technical data ETIM 7.0

| | | | |
|---|--|----|------------------|
| 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 (ec@ss10.0.1-27-37-18-03 [AKF097014]) | | | |
| Type of electric connection | | | Screw connection |
| With detachable clamps | | | No |
| Rated control supply voltage U_s at AC 50HZ | | V | 90 - 170 |
| Rated control supply voltage U_s at AC 60HZ | | V | 90 - 170 |
| Rated control supply voltage U_s at DC | | V | 0 - 0 |
| 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 | | V | 90 - 170 |
| Min. adjustable delay-on energization time | | s | 0.1 |
| Max. permitted delay-on energization time | | s | 30 |
| Min. adjustable off-delay time | | s | 0.1 |
| Max. permitted off-delay time | | s | 30 |
| 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 | | mm | 22.5 |
| Height | | mm | 85.6 |
| Depth | | mm | 104.6 |

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



Additional product information (links)

IL121007ZU Multifunction three-phase monitoring relays

| | |
|--|---|
| IL121007ZU Multifunction three-phase monitoring relays | ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL121007ZU.pdf |
| IL121007ZU Multifunction three-phase monitoring relays | ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL121007ZU2018_07.pdf |
| Phase monitoring relays | http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=11.36 |