



Phase monitoring relays, Multi-functional, 300 - 500 V AC, 50/60 Hz

Part no. **EMR6-AW500-D-1**
 Catalog No. **184764**
 Eaton Catalog No. **EMR6-AW500-D-1**

Technical data

General

| | | | |
|------------------------------------|------------|-----------------|---|
| Standards | | | IEC, UL, CSA, CCC, GL |
| Lifespan, mechanical | Operations | $\times 10^6$ | 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 | | | 300 - 500 V AC, 50/60 Hz |
| Voltage tolerance | | $\times U_c$ | 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 |
| Phase failure | | | LED red: F1 on, F2 flashes |
| Phase sequence error | | | LED red: F1, F2 flashing |
| 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, 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 | $\times 10^6$ | |
| Lifespan, electrical | Operations | $\times 10^6$ | 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 |

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 (ec1@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 | 300 - 500 |
| Rated control supply voltage U_s at AC 60HZ | | V | 300 - 500 |
| 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 | 300 - 500 |
| 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 | 23 |
| Height | mm | 85 |
| Depth | mm | 110 |

Dimensions

