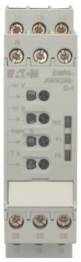
Specifications







Eaton 184770

Eaton Moeller® series EMR6 Phase monitoring relays, Multi-functional, 180 - 280 V AC, 50/60 Hz

General specifications	
PRODUCT NAME	Eaton Moeller® series EMR6 Phase monitoring relay
CATALOG NUMBER	184770
MODEL CODE	EMR6-AWN280-D-1
EAN	4015081788064
PRODUCT LENGTH/DEPTH	103.7 mm
PRODUCT HEIGHT	85.6 mm
PRODUCT WIDTH	22.5 mm
PRODUCT WEIGHT	0.16 kg
CERTIFICATIONS	IEC CCC UL GL CSA

Powering Business Worldwide

Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MAX	60 °C
AMBIENT STORAGE TEMPERATURE - MAX	85 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30

Electro magnetic compatibility

AIR DISCHARGE	Air/contact discharge, according to IEC/EN 61000-4-2, level 3
BURST IMPULSE	According to IEC/EN 61000-4-4, level 3
ELECTROMAGNETIC COMPATIBILITY	According to IEC/EN 60947-6-2
IMMUNITY TO LINE-CONDUCTED INTERFERENCE	Level 3 (according to IEC/EN 61000-4-6)
IMMUNITY TO RADIATION	Level 3 (according to IEC/EN 61000-4-3)
SURGE RATING	According to IEC/EN 61000-4-5 Level 4

Features & functions

ELECTRIC CONNECTION TYPE	Screw connection
FEATURES	Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages
FUNCTIONS	Phase failure detection Multi-functional Over voltage detection Under voltage detection
MONITORING FUNCTION	Phase imbalance monitoring Neutral cable break Phase sequence (can be deactivated) Overvoltage Undervoltage Phase sequence monitoring Imbalance Phase failure
VOLTAGE MEASUREMENT - MAX	280 V
VOLTAGE MEASUREMENT - MIN	180 V

General information

DEGREE OF PROTECTION	Enclosure: IP50 Terminals: IP20
LED INDICATOR	Status indication of Overvoltage: Red LED (F1 on) Status indication of Undervoltage: F2 red, solid light Status indication of Delay time running: Yellow, flashing light (R/T) Status indication of Imbalance: Red, solid light (F1 and F2) Status indication of Supply voltage: Yellow, solid light Status indication of Overvoltage: F1 red, solid light Status indication of Phase failure: F1 red, solid light and F2 red, flashing light Status indication of Phase sequence fault: Red, flashing light (F1 and F2 alternating) Status indication of Undervoltage: Red LED (F2 on) Status indication of Open neutral conductor: F1 red, solid light and F2 red, flashing light Status indication of Supply voltage: Yellow LED Status indication of Relay energized: Yellow, solid

	light (R)
LIFESPAN, MECHANICAL	30,000,000 Operations
MOUNTING POSITION	As required
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	EMR Measuring and monitoring relays
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	4000 V AC
SHOCK RESISTANCE	Class 2
SUITABLE FOR	Single-phase networks as well
TYPE	Phase monitoring relay
VOLTAGE TYPE	AC

Measuring circuits

HYSTERESIS	0 - 5 %
MEASURING CYCLE	100 ms
MONITORING VOLTAGE	180 - 280 V AC, 50/60 Hz (per phase)
TEMPERATURE ERROR	0.06 %/°C, Measuring circuits

Power supply

DUTY FACTOR	100 %, Power supply
POWER CONSUMPTION	3 VA
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MAX	280 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 50 HZ - MIN	180 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MAX	280 V
RATED CONTROL SUPPLY VOLTAGE (US) AT AC, 60 HZ - MIN	180 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MAX	0 V
RATED CONTROL SUPPLY VOLTAGE (US) AT DC - MIN	0 V
RATED FREQUENCY - MAX	60 Hz
RATED FREQUENCY - MIN	50 Hz
SUPPLY VOLTAGE	180 - 280 V AC, 50/60 Hz
VOLTAGE TOLERANCE	0.85 x Uc 1.1 x Uc

Relay output contacts

LIFESPAN, ELECTRICAL	100,000 Operation (at 230 V, AC-12, 4 A)
NUMBER OF CONTACTS (CHANGE-OVER CONTACTS)	2
NUMBER OF CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF CONTACTS (NORMALLY OPEN CONTACTS)	0
RATED OPERATIONAL CURRENT (IE)	4 A at AC-12, 230 V 4 A at DC-12, 24 V 2 A at DC-13, 24 V 3 A at AC-15, 230 V
RATED OPERATIONAL VOLTAGE (UE) AT AC - MAX	250 V
SHORT-CIRCUIT PROTECTION RATING	Max. 10 A Fast/gL, Fuse, Relay output contacts

Terminal capacities

CONNECTION TYPE	Snap fixing, top-hat rail IEC/EN 60715
SCREWDRIVER SIZE	5.5 x 0.8 mm, Terminal screw
TERMINAL CAPACITY	2 x (0.5-1.5) mm², (2 x (18-16) AWG), flexible with ferrule 1 x (0.5-2.5) mm², (1 x (18-14) AWG), solid
TIGHTENING TORQUE	Min. 0.6 Nm, Screw terminals 0.8 Nm, Screw terminals

Timing cycle

DELAY TIME	Start-up delay fixed Ts = 200 ms Adjustable tripping delay Tv = 0 - 30 s
TIMING CYCLE	0.5 %, Time error within supply voltage 0.06 %/°C, Time error within temperature range 0.5 % Error within supply voltage (Measuring circuits)

Resources

APPLICATION NOTES	easyE4 and EMR6 - the perfect match for safe motor control
BROCHURES	EMR6 - EMT6 - ETR4 brochure
CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-asymmetry-monitoring-relay-declaration-of-conformity-eu251531en.pdf eaton-phase-monitoring-relay-declaration-of-conformity-uk251043en.pdf
ECAD MODEL	ETN.184770.edz
INSTALLATION INSTRUCTIONS	eaton-multi-function-3phase-relay-emr6-il121007zu.pdf
MCAD MODEL	eaton-cam-switches-mcad-drawings-emr6-r-t-v-i.dwg DA-CS-emr6_r_t_v_i
WIRING DIAGRAMS	eaton-phase-monitors-relay-wiring-diagram.eps

PROJECT NAME:	
PROJECT NUMBER:	
PREPARED BY:	
DATE:	

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