

Timing relay, star-delta, 50 ms, 1W, 3-60s, 400VAC

Part no. **ETR4-51-W**
 031885
 EL Number **4110007**
 (Norway)

General specifications		
Product name		Eaton Moeller® series ETR4 Timing relay
Part no.		ETR4-51-W
EAN		4015080318859
Product Length/Depth		103 millimetre
Product height		83 millimetre
Product width		23 millimetre
Product weight		0.117 kilogram
Certifications		IEC/EN 61000-4-2 Standard IEC/EN 61812 VDE 0435 IEC/EN 61000-4-3
Product Tradename		ETR4
Product Type		Timing relay
Product Sub Type		None
Catalog Notes		Changeover contact with a changeover time of 50 ms Making and breaking conditions to DC13, time constant as stated When supplied directly from mains or transformer > 1000 VA
Features & Functions		
Electric connection type		Screw connection
Functions		Fixed timing function Star-delta Star-delta switching
General information		
Degree of protection		Terminals: IP20 IP20
Lifespan, mechanical		30,000,000 Operations (DC operated) 30,000,000 Operations (AC operated)
Mounting position		As required
Number of contacts (change-over contacts)		1
Overvoltage category		III
Pollution degree		2
Product category		ETR4 timing relays
Rated impulse withstand voltage (Uimp)		6000 V AC
Shock resistance		4 g, Make contact, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms
Suitable for		DIN rail (top hat rail) mounting
Terminal capacity		1 x (0.5 - 2.5) mm ² , solid 2 x (0.5 - 1.5) mm ² , solid 1 x (20 - 14) AWG, solid or stranded 2 x (0.5 - 1.5) mm ² , flexible with ferrule 1 x (0.5 - 2.5) mm ² , flexible with ferrule
Time range - min		3 s
Time range - max		60 s
Type		Timer relay
Voltage type		AC
Climatic environmental conditions		
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		60 °C
Ambient operating temperature (enclosed) - min		25 °C
Ambient operating temperature (enclosed) - max		45 °C
Ambient storage temperature - min		45 °C
Ambient storage temperature - max		85 °C

Climatic proofing		Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Electro magnetic compatibility		
Air discharge		8 kV
Burst impulse		According to IEC/EN 61000-4-4 2 kV, Supply cable 1 kV, Signal cable
Contact discharge		6 kV
Electromagnetic fields		10 V/m at 80 - 1000 MHz (according to IEC EN 61000-4-3) 1 V/m at 2.0 - 2.7 GHz (according to IEC EN 61000-4-3) 3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3)
Immunity to line-conducted interference		10 V (according to IEC/EN 61000-4-6)
Radio interference class		Class B (EN 55011, radiated) Class B (EN 55011, conducted)
Surge rating		According to IEC/EN 61000-4-5, power pulses (Surge), EMC 2 kV, symmetrical, power pulses (Surge), EMC 4 kV, asymmetrical, power pulses (Surge), EMC
Electrical rating		
Conventional thermal current I _{th} of auxiliary contacts (1-pole, open)		6 A
Mains voltage tolerance		400 V AC (at 50/60 Hz)
Nominal current		3 A
Rated breaking capacity		3 A at AC-15 (cos φ = 0.3 220 V) 1.1 x I _n (DC-11 L/R - 40 ms) 3 A at AC-14 (cos φ = 0.3 440 V)
Rated frequency - min		47 Hz
Rated frequency - max		63 Hz
Rated insulation voltage (U _i)		600 V
Rated making capacity		1.1 x I _n (DC-11 L/R - 40 ms) 50 A (AC-15 cos φ = 0.3 220 V) 48 A (AC-14 cos φ = 0.3 400 V)
Rated operational current (I _e)		3 A at AC-14, 440 V 1.5 A at DC-11, 24 V 3 A at AC-15, 220 V 230 V 240 V 3 A at AC-15, 380 V 400 V 415 V 1.2 A at DC-11, L/R max. 50 ms 3 A at AC-14, 380 V 400 V 415 V
Rated operational voltage (U _e) at AC - max		440 V
Safe isolation		250 V AC, Between coil and auxiliary contacts, According to EN 61140 250 V AC, Between auxiliary contacts, According to EN 61140
Short-circuit protection rating		Max. 6 A gG/gL, Fuse, Short-circuit rating without welding, Contacts Max. 6 A gG/gL, fuse, Without welding, Contacts
Magnet system		
Command time		50 ms, AC
Contact changeover time		50 ms
Duty factor		100 %
Operating frequency		4000 Operations/h
Pick-up voltage		0.85 - 1.1 V AC x U _c
Power consumption		0.5 VA at AC (Pick-up power) 0.5 VA at AC (Sealing power)
Rated control supply voltage (U _s) at AC, 50 Hz - min		400 V
Rated control supply voltage (U _s) at AC, 50 Hz - max		400 V
Rated control supply voltage (U _s) at AC, 60 Hz - min		400 V
Rated control supply voltage (U _s) at AC, 60 Hz - max		400 V
Rated control supply voltage (U _s) at DC - min		0 V
Rated control supply voltage (U _s) at DC - max		0 V
Recovery time		70 ms (after 100 % time delay)
Repetition accuracy		≤ 0.5 % (deviation)
Voltage tolerance		1.1 x U _c , AC operated max. 0.85 x U _c , AC operated min.
Design verification		
Equipment heat dissipation, current-dependent P _{vid}		0 W
Heat dissipation capacity P _{diss}		0 W
Heat dissipation per pole, current-dependent P _{vid}		1.4 W

Rated operational current for specified heat dissipation (In)		6 A
Static heat dissipation, non-current-dependent Pvs		0.5 W
10.2.2 Corrosion resistance		Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures		Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat		Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects		Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation		Meets the product standard's requirements.
10.2.5 Lifting		Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact		Does not apply, since the entire switchgear needs to be evaluated.
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.
10.9.2 Power-frequency electric strength		Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage		Is the panel builder's responsibility.
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 9.0

Relays (EG000019) / Timer relay (EC001439)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Relay and socket / Timer relay (ecl@ss13-27-37-16-05 [AKF092018])		
Type of electric connection		Screw connection
Complete with socket		No
Suitable for DIN rail (top hat rail) mounting		Yes
Suitable for front mounting		No
Pluggable on auxiliary contact block		No
Function delay-on energization		No
Function delay on de-energization		No
Function floating contact on energization		No
Function floating contact on de-energization		No
Function star-delta		Yes
Function pulse shaping		No
Function flashing, starting with pause, fixed time		No
Function flashing, starting with pulse, fixed time		No
Clock function, starting with pause, variable		No
Clock function, starting with pulse, variable		No
Time range	s	3 - 60
Remote operation possible		No
Suitable as remote control		No
Rated control supply voltage AC 50 Hz	V	400 - 400
Rated control supply voltage AC 60 Hz	V	400 - 400
Rated control supply voltage DC	V	0 - 0
Voltage type for actuating		AC
Number of outputs, undelayed, normally closed contact		0
Number of outputs, undelayed, normally open contact		1
Number of outputs, undelayed, change-over contact		0
Number of outputs, delayed, normally closed contact		0

Number of outputs, delayed, normally open contact			1
Number of outputs, delayed, change-over contact			0
Outputs, reversible delayed/undelayed			No
With semiconductor output			No
Material of contact insert			
Material contact			
Material of contact surface			
Operating voltage AC 50 Hz		V	400 - 400
Operating voltage AC 60 Hz		V	400 - 400
Operating voltage DC		V	
Voltage type (operating voltage)			AC
Nominal current		A	3
Max. starting current		A	
Degree of protection (IP)			IP20
Relay technology category according to IEC 61810-7			
Width		mm	23
Height		mm	83
Depth		mm	103