

Timing relay, star-delta, 50 ms, 1W, 3-60s, 24-240VAC/DC

Part no. ETR4-51-A
031884
EL Number 4133308
(Norway)

General specifications	
Product name	Eaton Moeller® series ETR4 Timing relay
Part no.	ETR4-51-A
EAN	4015080318842
Product Length/Depth	103 millimetre
Product height	83 millimetre
Product width	23 millimetre
Product weight	0.115 kilogram
Certifications	UL Category Control No.: NKCR CSA Class No.: 3211-03 IEC/EN 61812-1 UL UL 508 CSA IEC/EN 61000-4-2 Standard IEC/EN 61812 CE IEC/EN 61000-4-3 CSA-22.2 No. 14 IEC/EN 60947-5-1 VDE 0435 CSA File No.: 012528 UL File No.: E29184
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	IP20 Terminals: IP20
Lifespan, mechanical	30,000,000 Operations (AC operated) 30,000,000 Operations (DC 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 4000 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 (20 - 14) AWG, solid or stranded 2 x (0.5 - 1.5) mm ² , flexible with ferrule 2 x (0.5 - 1.5) mm ² , solid 1 x (0.5 - 2.5) mm ² , solid 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/DC

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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Electro magnetic compatibility		
Air discharge		8 kV
Burst impulse		2 kV, Supply cable 1 kV, Signal cable According to IEC/EN 61000-4-4
Contact discharge		6 kV
Electromagnetic fields		3 V/m at 1.4 - 2 GHz (according to IEC EN 61000-4-3) 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)
Immunity to line-conducted interference		10 V (according to IEC/EN 61000-4-6)
Radio interference class		Class B (EN 55011, conducted) Class B (EN 55011, radiated)
Surge rating		2 kV, symmetrical, power pulses (Surge), EMC 4 kV, asymmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5, power pulses (Surge), EMC
Electrical rating		
Conventional thermal current Ith of auxiliary contacts (1-pole, open)		6 A
Mains voltage tolerance		24 - 240 V AC (at 50/60 Hz) 24 – 240 V DC
Nominal current		3 A
Rated breaking capacity		3 A at AC-15 (cos φ = 0.3 220 V) 3 A at AC-14 (cos φ = 0.3 440 V) 1.1 x I# (DC-11 L/R - 40 ms)
Rated making capacity		50 A (AC-15 cos φ = 0.3 220 V) 48 A (AC-14 cos φ = 0.3 400 V) 1.1 x I# (DC-11 L/R - 40 ms)
Rated operational current (Ie)		3 A at AC-15, 300 V 3 A at AC-14, 380 V 400 V 415 V 1.5 A at DC-11, 24 V 3 A at AC-15, 380 V 400 V 415 V 3 A at AC-14, 440 V 1.2 A at DC-11, L/R max. 50 ms 3 A at AC-15, 220 V 230 V 240 V 3 A at AC-14, 300 V (NC)
Rated operational voltage (Ue) 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, Without welding, Contacts Max. 6 A gG/gL, Fuse, Short-circuit rating without welding, Contacts
Magnet system		
Command time		30 ms, DC 50 ms, AC
Contact changeover time		50 ms
Duty factor		100 %
Operating frequency		4000 Operations/h
Pick-up voltage		0.7 - 1.1 V DC x Uc 0.85 - 1.1 V AC x Uc
Power consumption		1.8 W at DC (Pick-up power) 2 VA at AC (Sealing power) 2 VA at AC (Pick-up power) 1.8 W at DC (Sealing power)
Rated control supply voltage (Us) at AC, 50 Hz - min		24 V
Rated control supply voltage (Us) at AC, 50 Hz - max		240 V
Rated control supply voltage (Us) at AC, 60 Hz - min		24 V
Rated control supply voltage (Us) at AC, 60 Hz - max		240 V
Rated control supply voltage (Us) at DC - min		24 V
Rated control supply voltage (Us) at DC - max		240 V

Recovery time		70 ms (after 100 % time delay)
Repetition accuracy		≤ 0.5 % (deviation)
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 (I _n)		6 A
Static heat dissipation, non-current-dependent P _{vs}		1.8 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	24 - 240
Rated control supply voltage AC 60 Hz	V	24 - 240

Rated control supply voltage DC	V	24 - 240
Voltage type for actuating		AC/DC
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	24 - 240
Operating voltage AC 60 Hz	V	24 - 240
Operating voltage DC	V	24 - 240
Voltage type (operating voltage)		AC/DC
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