## Timing relay, 2W, 0.05s-100h, multi-function, 24-240VAC/DC, potentiometer connection



Part no. ETR4-70-A

031888

EL Number

4133311

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General specifications	
Product name	Eaton Moeller® series ETR4 Timing relay
Part no.	ETR4-70-A
EAN	4015080318880
Product Length/Depth	103 millimetre
Product height	83 millimetre
Product width	23 millimetre
Product weight	0.141 kilogram
Certifications	UL File No.: E29184 CSA-22.2 No. 14 UL 508 CE UL Category Control No.: NKCR VDE 0435 IEC/EN 60947-5-1 IEC/EN 61000-4-3 CSA File No.: 012528 CSA Standard IEC/EN 61812 CSA Class No.: 3211-03 IEC/EN 61812-1 UL IEC/EN 61000-4-2
Product Tradename	ETR4
Product Type	Timing relay
Product Sub Type	None
Catalog Notes  Features & Functions	Changeover contact can be converted to 2 timed contacts or 1 non-delayed contact and 1 timed contact  Making and breaking conditions to DC13, time constant as stated  When supplied directly from mains or transformer > 1000 VA
Electric connection type	Screw connection
Fitted with:	Connection for potentiometer (4,7 k $\Omega$ )
Functions	Remote operation possible Fleeting contact on energization Delay on de-energization Delay-on energization Flashing, starting with pause, fixed time Pulse shaping Flashing, pulse initiating Flashing, starting with pulse, fixed time Fleeting contact on de-energization Clock function, starting with pulse, variable On- and Off-delayed Pulse generating Multi-functional Adjustable timing function Clock function, starting with pause, variable On-delayed Outputs, reversible delayed/undelayed Off-delayed Pulse forming
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)	2
Overvoltage category	III
Pollution degree	2

Rated impulse withstand voltage (Uimp)	4000 V AC 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 (20 - 14) AWG, solid or stranded 1 x (0.5 - 2.5) mm², flexible with ferrule 1 x (0.5 - 2.5) mm², solid 2 x (0.5 - 1.5) mm², solid 2 x (0.5 - 1.5) mm², flexible with ferrule
Time range - min	0.05 s
Time range - max	360000 s
Туре	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  Electro magnetic compatibility	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Air discharge	8 kV
Burst impulse	According to IEC/EN 61000-4-4
23.8t imputed	2 kV, Supply cable 1 kV, Signal cable
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, radiated) Class B (EN 55011, conducted)
Surge rating	2 kV, symmetrical, power pulses (Surge), EMC According to IEC/EN 61000-4-5, power pulses (Surge), EMC 4 kV, asymmetrical, 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 ( $\cos \phi$ = 0.3 220 V) 3 A at AC-14 ( $\cos \phi$ = 0.3 440 V) 1.1 x I# (DC-11 L/R - 40 ms)
Rated making capacity	48 A (AC-14 $\cos \varphi = 0.3400 \text{ V}$ ) 50 A (AC-15 $\cos \varphi = 0.3220 \text{ V}$ ) 1.1 x $I\#$ (DC-11 L/R - 40 ms)
Rated operational current (le)	3 A at AC-14, 380 V 400 V 415 V 3 A at AC-15, 220 V 230 V 240 V 1.2 A at DC-11, L/R max. 50 ms 3 A at AC-15, 380 V 400 V 415 V 1.5 A at DC-11, 24 V 3 A at AC-14, 440 V 3 A at AC-14, 300 V (NC) 3 A at AC-15, 300 V
Rated operational voltage (Ue) at AC - max	440 V
Safe isolation	250 V AC, Between auxiliary contacts, According to EN 61140 250 V AC, Between coil and 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 30 ms, DC
Contact changeover time	4 ms
Duty factor	100 %

Pick-up voltage   0.85 - 1.1 V A.S. VLC   1.2 VLC   1.	Operating frequency	4000 Operations/h
Rated control supply voltage (Us) at AC, 50 Hz - min  Rated control supply voltage (Us) at AC, 50 Hz -	Pick-up voltage	
Rated control supply voltage (Us) at AC, 50 Hz - max  Rated control supply voltage (Us) at AC, 60 Hz - min  Rated control supply voltage (Us) at AC, 60 Hz - max  Rated control supply voltage (Us) at DC - min  Rated control supply voltage (Us) at DC - max  Rated control supply voltage (Us) at DC - max  Resourcy time  Repetition accuracy  Posign verification  Equipment heat dissipation, current-dependent Pvid  Heat dissipation, current-dependent Pvid  Heat dissipation per pole, current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Rated operational current for specified heat dissipation (In)  Static heat dissipation or esistance  10.2.3 I Verification of thermal stability of enclosures  10.2.3 Verification of thermal stability of enclosures  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  10.2.6 Mechanical impact  10.2.6 Mechanical impact  10.2.7 Inscriptions  10.8 Gene not apply, since the entire switchgear needs to be evaluated.  10.4 Clearances and creepage distances  10.5 Frotection against electric shock  10.6 Incorporation of existence domestines  10.7 Internal electric alcricuits and connections  10.8 Incorporation of existence of multipart of existences  10.9 Power-frequency electric strength  10.8 Power-frequency electric strength  10.9 Power-frequency electric strength  10.9 Power-frequency electric strength  10.9 Power-frequency electric strength  10.9 Internal electric shoulation  10.9 Power-frequency electric strength  10.9 Power-frequency electric strength  10.9 Internal electric strength  10.9 I	Power consumption	2 VA at AC (Sealing power) 1.8 W at DC (Sealing power)
Rated control supply voltage (Us) at AC, 60 Hz - min Rated control supply voltage (Us) at AC, 60 Hz - max 240 V Rated control supply voltage (Us) at DC - min 244 V Rated control supply voltage (Us) at DC - min 240 V Recovery time Repetition accuracy 25.5% (deviation)  Repetition accuracy 25.5% (deviation)  Repetition accuracy 25.5% (deviation)  Repetition accuracy 25.5% (deviation)  Repulpment heat dissipation, current-dependent Pvid 26	Rated control supply voltage (Us) at AC, 50 Hz - min	24 V
Rated control supply voltage (Us) at AC, 60 Hz - max  Rated control supply voltage (Us) at DC - min  Rated control supply voltage (Us) at DC - max  Recovery time Repetition accuracy  Posign verification  Equipment heat dissipation, current-dependent Pvid  Heat dissipation apacity Pdiss  Heat dissipation per pole, current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, on-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, on-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, on-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, on-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, non-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, non-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, non-current-dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation, non-current dependent Pvid  Rated operational current for specified heat dissipation (In)  Static heat dissipation of the dissipation (In)  Rated operational current for specified heat dissipation (In)  Rated operation of switchiage are ease to be evaluated.  Rated operational current for specified heat dissipation (In)  Rated operational current for specified heat dissipation (In)  Rated operational current for specified heat dissipation (In)  Rated operational current for specified heat d	Rated control supply voltage (Us) at AC, 50 Hz - max	240 V
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Rated control supply voltage (Us) at DC - max  Recovery time  Repetition accuracy  Design verification  Equipment heat dissipation, current-dependent Pvid  Heat dissipation capacity Pdiss  Heat dissipation per pole, current-dependent Pvid  Attack doperational current for specified heat dissipation (In)  Static heat dissipation, non-current-dependent Pvid  Attack doperational current for specified heat dissipation (In)  Static heat dissipation, non-current-dependent Pvis  1.8 W  10.2.2 Corrosion resistance  Meets the product standard's requirements.  10.2.3.1 Verification of thermal stability of enclosures  10.2.3.2 Verification of resistance of insulating materials to normal heat  10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects  10.2.4 Resistance to ultra-violet (UV) radiation  10.2.5 Lifting  Does not apply, since the entire switchgear needs to be evaluated.  10.2.5 Inscriptions  10.3 Degree of protection of assemblies  10.4 Clearances and creepage distances  10.5 Protection against electric shock  10.5 Does not apply, since the entire switchgear needs to be evaluated.  10.4 Clearances and creepage distances  10.5 Incorporation of switching devices and components  10.5 Does not apply, since the entire switchgear needs to be evaluated.  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  11.5 Thermal electrical circuits and connections  12.5 Insured builder's responsibility.  10.9.2 Power-frequency electric strength  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  15. The panel builder's responsibility.	Rated control supply voltage (Us) at AC, 60 Hz - max	240 V
Recovery time 70 ms (after 100 % time delay) Repetition accuracy \$0.5 % (deviation)  Equipment heat dissipation, current-dependent Pvid 0W Heat dissipation capacity Pdiss 0W Heat dissipation per pole, current-dependent Pvid 1AW Rated operational current for specified heat dissipation (In) 6A Static heat dissipation, non-current-dependent Pvid 1AW Rated operational current for specified heat dissipation (In) 6A Static heat dissipation, non-current-dependent Pvs 1AW 10.2.2 Corrosion resistance 0Meets 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. 10.2.4 Resistance to ultra-violet (UV) radiation Meets the product standard's requirements. 10.2.5 Lifting 0Does not apply, since the entire switchgear needs to be evaluated. 10.2.5 Lifting Does not apply, since the entire switchgear needs to be evaluated. 10.2.1 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. 10.9.2 Power-frequency electric strength Is the panel builder's responsibility.	Rated control supply voltage (Us) at DC - min	24 V
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10.3 Degree of protection of assemblies  10.4 Clearances and creepage distances  Meets the product standard's requirements.  10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.	10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances  10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  Meets the product standard's requirements.  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.	10.2.7 Inscriptions	Meets the product standard's requirements.
10.5 Protection against electric shock  10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.	10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components  10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  Does not apply, since the entire switchgear needs to be evaluated.  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.	10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.7 Internal electrical circuits and connections  10.8 Connections for external conductors  10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  Is the panel builder's responsibility.  Is the panel builder's responsibility.  Is the panel builder's responsibility.	10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.8 Connections for external conductorsIs the panel builder's responsibility.10.9.2 Power-frequency electric strengthIs the panel builder's responsibility.10.9.3 Impulse withstand voltageIs the panel builder's responsibility.	10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.9.2 Power-frequency electric strength  10.9.3 Impulse withstand voltage  Is the panel builder's responsibility.  Is the panel builder's responsibility.	10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage 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.
10.9.4 Testing of enclosures made of insulating material 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. Eato provide heat dissipation data for the devices.	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 observed.	10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must b observed.
10.12 Electromagnetic compatibility  Is the panel builder's responsibility. The specifications for the switchgear observed.	10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must b observed.
10.13 Mechanical function  The device meets the requirements, provided the information in the instru leaflet (IL) is observed.	10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 8.0**

Relays (EG000019) / Timer relay (EC001439)					
Electric engineering, automation, process control engineering / Low-voltage switch technology / Relay and socket / Timed relay (ecl@ss10.0.1-27-37-16-05 [AKF092013])					
Type of electric connection	Screw connection				
Function delay-on energization	Yes				
Function delay on de-energization	Yes				
Function floating contact on energization	Yes				
Function floating contact on de-energization	Yes				
Function star-delta	No				
Function pulse shaping	Yes				
Function flashing, starting with pause, fixed time	Yes				

Function flashing, starting with pulse, fixed time		Yes
Clock function, starting with pause, variable		Yes
Clock function, starting with pulse, variable		Yes
With plug-in socket		No
Remote operation possible		Yes
Suitable as remote control		No
Pluggable on auxiliary contact block		No
Rated control supply voltage Us at AC 50HZ	V	24 - 240
Rated control supply voltage Us at AC 60HZ	V	24 - 240
Rated control supply voltage Us at DC	V	24 - 240
Voltage type for actuating		AC/DC
Nominal current	Α	3
Time range	s	0.05 - 360000
Number of outputs, undelayed, normally closed contact		0
Number of outputs, undelayed, normally open contact		0
Number of outputs, undelayed, change-over contact		2
Number of outputs, delayed, normally closed contact		0
Number of outputs, delayed, normally open contact		0
Number of outputs, delayed, change-over contact		2
Outputs, reversible delayed/undelayed		Yes
With semiconductor output		No
Suitable for DIN rail (top hat rail) mounting		Yes
Suitable for front mounting		No
Width	mm	23
Height	mm	83
Depth	mm	103