DATASHEET - ETR4-51-A

Part no.

(Norway)

No.



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

ETR4-51-A Catalog No. 031884 Alternate Catalog XTTR6A60S51B 0004133308 **EL-Nummer**



Delivery program

Product range			ETR4 timing relays
Basic function			Timer relays
Function			Star-delta switching
			Changeover contact with a changeover time of 50 ms Fixed timing function
Number of changeover contacts			1
Time range			3 - 60 s
Time range			3 - 60 s
Rated operational current			
AC-14			
300 V	le	A	3
380 V 400 V 415 V	l _e	Α	3
			Value applies starting with release 001.
AC-15			
220 V 230 V 240 V	le	A	3
300 V	l _e	Α	3
380 V 400 V 415 V	l _e	Α	3
			Value applies starting with release 001.
Voltage range	U _{LN}	V	24 - 240 V AC, 50/60 Hz 24 – 240 V DC
Width		mm	22.5
$\begin{array}{c} A1 & 17 \\ \hline \\ \hline \\ \\ A2 & 18 & 28 \end{array}$			

Technical data

General			
Standards			Standard IEC/EN 61812 VDE 0435
Lifespan, mechanical			
AC operated	Operations	x 10 ⁶	30
DC operated	Operations	x 10 ⁶	30
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Ambient temperature, storage		°C	- 45 - + 85
Open		°C	-25 - +60
Enclosed		°C	- 25 - + 45
Mounting position			As required
Mechanical shock resistance (IEC/EN 60068-2-27)			
Half-sinusoidal shock, 20 ms		g	
Make contact		g	4
Degree of protection			
Terminals			IP20

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AC-15 Image: Control of the second of the seco				
20 V	440 V	Ι _e	A	3
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Nde Addition and the second constant a	220 V 230 V 240 V	Ι _e	A	3
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24V P A 5 LR max.50 ms A 5 Conv. thermal current A A Amount A A </td <td>Note</td> <td></td> <td></td> <td>Making and breaking conditions to DC13, time constant as stated</td>	Note			Making and breaking conditions to DC13, time constant as stated
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Conv. thermal current Ha A A B Note Image: Converting without welding Image: Converting without welding Image: Converting without welding Image: Converting weight w	24 V	Ie	А	1.5
Short-circuit rating without welding Max Wen supplied directly from mains or transformer > 1000 VA Max. fuse, make contacts G A g6/gL G Max. fuse, break contacts G A g6/gL G Max. overcurrent protective device, 220/230 V Type FZ-B4/1-HI Magnet systems FZ-B4/1-HI FZ-B4/1-HI Power consumption Max Q Q Pick-up AC Max Q Q Sealing AC G Q Q Pick-up DC Max Q Q	L/R max. 50 ms		А	1.2
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Power consumptionImage: ConsumptionPick-up ACVA2Sealing ACVA2Pick-up DCVA1.8Sealing DCVA1.8	Magnet systems			
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Sealing DC W 1.8	Sealing AC		VA	2
	Pick-up DC		W	1.8
Duty factor % DF 100	Sealing DC		W	1.8
	Duty factor		% DF	100

Inimum command time Image: Marge of the second				
AC ms second se	Maximum operating frequency		Ops/h	4000
DCImage: second sec	Minimum command time			
Repetition accuracy (deviation) % <t< td=""><td>AC</td><td></td><td>ms</td><td>50</td></t<>	AC		ms	50
lectromagnetic fields (RFI) applied standard applied standard field (RFI) applied standard	DC		ms	30
totace changeover time totace changeover time totace change methods	Repetition accuracy (deviation)		%	≦ 0.5
Idectromagnetic compatibility (EMC) Idectrostatic discharge (ESD) Image: Ima	Recovery time (after 100% time delay)		ms	70
indext discharge (ESD) indext discharge (ESD) IEC/EN 61000-4-2 Air discharge KV 8 Contact discharge KV 6 Contact discharge KV 10000-4-2 Indext discharge KV 10000-4-2 applied standard IEC/EN 61000-4-3 IEC/EN 61000-4-3 applied standard IEC/EN 61000-4-3 IEC/EN 61000-4-3 addio interference suppression Image: Suppression Image: Suppression Suppression Supst Supst (Surge) Supst (Surge) Supst (Surge)	Contact changeover time	t _u	ms	50
aplied standard IEC/EN 61000-4-2 Air discharge KV 8 Contact discharge KV 6 Edectromagnetic fields (RFI) EEC/EN 61000-4-3 applied standard V/m 0 - 1000 MHz: 10 addio interference suppression So 0 - 1000 MHz: 10 status KV So So awst Conducted) KV So sover pulses (Surge) KV Surget (Surge) Surget (Surget)	Electromagnetic compatibility (EMC)			
Air discharge KV Contact discharge KV Contact discharge KV Electromagnetic fields (RFI) FCE/EN 61000-4-3 applied standard S0 - 1000 MHz: 10 14 - 2 GHz: 3 2,0 - 2,7 GHz: 1 Radio interference suppression SC EN 55011, Class B (conducted) EN 55011, Class B (radiated) Burst Supply cables: 2 Signal cables: 1 according to IEC/EN 61000-4-4 bower pulses (Surge) KV Supply cables: 2 Signal cables: 1 according to IEC/EN 61000-4-4	Electrostatic discharge (ESD)			
Contact discharge KV 6 Electromagnetic fields (RFI) F F applied standard IC/EN 61000-4-3 IC/EN 61000-4-3 Contact discharge V/m 80 - 1000 MHz: 10 1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1 Radio interference suppression IC EN 55011, Class B (conducted) EN 55011, Class B (radiated) Burst Supply cables: 2 Signal cables: 1 according to IEC/EN 61000-4-4 hower pulses (Surge) IC Supply cables: 2 Signal cables: 1 according to IEC/EN 61000-4-5	applied standard			IEC/EN 61000-4-2
Electromagnetic fields (RFI) applied standard applied standard IEC/EN 61000-4-3 IEC/EN 61000-4-3 IEC/EN 61000-4-3 Standard Standard Standard IEC/EN 61000-4-3 IEC/EN 61000-4-4 IEC/EN 61000-4-4 IEC/EN 61000-4-5	Air discharge		kV	8
applied standardIEC/EN 61000-4-3IEC/EN 61000-4-4IEC/EN 61000-4-5IEC/EN 61000-4-5	Contact discharge		kV	6
V/m But reference suppression Badio interference suppression Image: Constraint of the suppression of the suppression Burst Image: Constraint of the suppression of the supervision of the	Electromagnetic fields (RFI)			
1.4 - 2 GHz: 3 2.0 - 2.7 GHz: 1Radio interference suppressionImage: Constant of the suppressionBurstImage: Constant of the suppressionBurstImage: Constant of the suppressionpower pulses (Surge)Image: Constant of the suppressionImage: Constant	applied standard			IEC/EN 61000-4-3
Burst KV Supply cables: 2 Signal cables: 1 according to IEC/EN 61000-4-4 power pulses (Surge) Class B (radiated)			V/m	1.4 - 2 GHz: 3
Signal cables: 1 according to IEC/EN 61000-4-4 bower pulses (Surge) 2 kV (symmetrical) 4 kV (asymmetrical) according to IEC/EN 61000-4-5	Radio interference suppression			
4 kV (asymmetrical) according to IEC/EN 61000-4-5	Burst		kV	Signal cables: 1
mmunity to line-conducted interference to (IEC/EN 61000-4-6) V 10	power pulses (Surge)			4 kV (asymmetrical)
	Immunity to line-conducted interference to (IEC/EN 61000-4-6)		V	10

Design verification as per IEC/EN 61439

Design vernication as per icc/civ 01455			
Technical data for design verification			
Rated operational current for specified heat dissipation	l _n	А	6
Heat dissipation per pole, current-dependent	P _{vid}	W	1.4
Equipment heat dissipation, current-dependent	P _{vid}	W	0
Static heat dissipation, non-current-dependent	P _{vs}	W	1.8
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
EC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties			
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.

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

Relays (EG000019) / Timer relay (EC001439)

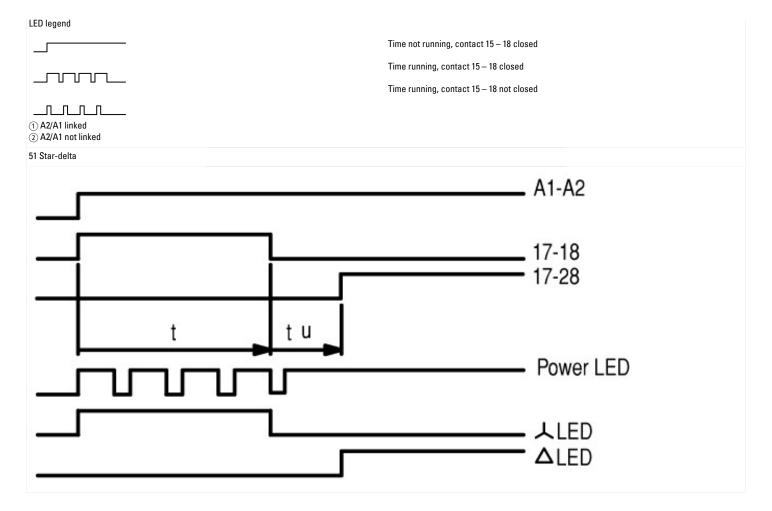
Electric engineering, automation, process control engineering / Low-voltage sv	vitch technology /	Relay and	l socket / Timed relay (ecl@ss10.0.1-27-37-16-05 [AKF092013])
Type of electric connection			Screw connection
Function delay-on energization			No
Function delay on de-energization			No
Function 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
With plug-in socket			No
Remote operation possible			No
Suitable for 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		А	3
Time range		s	3 - 60
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
Suitable for DIN rail (top hat rail) mounting			Yes
Suitable for front mounting			No
Width		mm	23
Height		mm	83
Depth		mm	103

Approvals

Product Standards	IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14; CE marking
UL File No.	E29184
UL Category Control No.	NKCR
CSA File No.	12528
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Degree of Protection	IEC: IP20, UL/CSA Type: -

Characteristics

Flow diagram for timing functions



Dimensions

