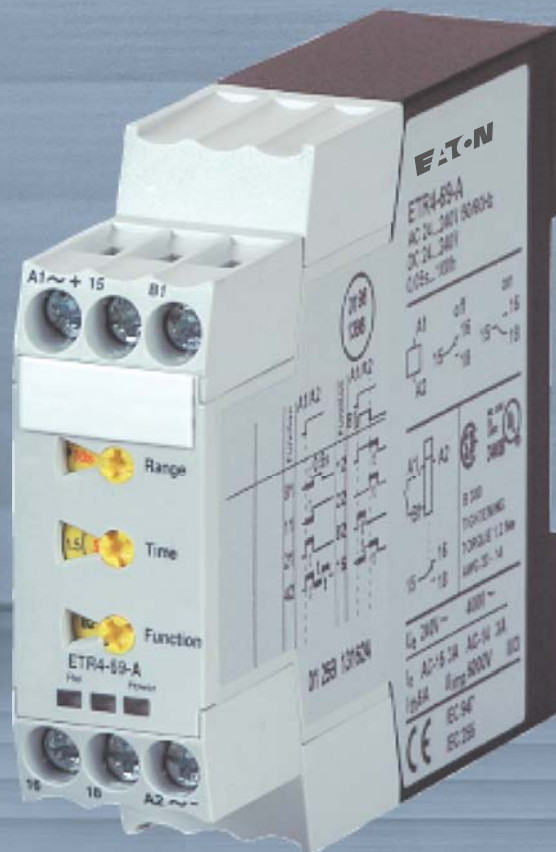


ETR timing relay

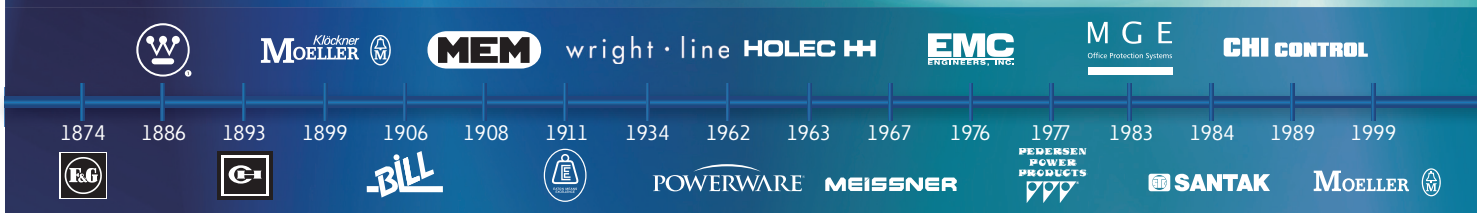


EAT•N

Powering Business Worldwide

EAT•N

The power of fusion.



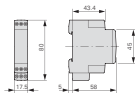
EAT•N

Powering Business Worldwide

There's a certain energy at Eaton. It's the power of uniting some of the world's most respected names to build a brand you can trust to meet every power management need. The energy created supports our commitment to powering business worldwide.

Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customized, integrated solutions to solve our customers' most critical challenges. Eaton.com/Electrical.

All of the above are trademarks of Eaton Corporation or its affiliates. •Eaton has a license to use the Westinghouse brand name in Asia Pacific. ©2012 Eaton Corporation.



Ordering

DILET timing relays 2

ETR4 timing relays 4

ETR2 timing relays 6

Engineering

DILET, ETR timing relay

Contact sequence diagram 8

Load limit curves 10

Technical data

DILET, ETR4 timing relays 11

ETR2 timing relays 13

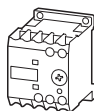
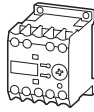
Dimensions

DILET, ETR timing relays 15

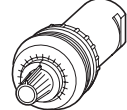
Electronic relays

Timing relays

Timing relays DILET

	Rated operational current AC-11		Conventional thermal current	Time Range	Voltage range	Part no. Article No.	Price See price list	Std. pack
	230 V	400 V	I_{th}					
	I_e	I_e	A					
	A	A						
	A	A						
On-delayed								
Timing functions → Page 8								
Component lifespan → Page 10								
	3	3	6	1.5 - 30 s	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	DILET11-30-A 048878	1 off	 
	3	3	6	1.5 - 30 s	400 V AC, 50/60 Hz	DILET11-30-W 048904	1 off	 
	3	3	6	0.05 - 1 s 0.15 - 3 s 0.5 - 10 s	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	DILET11-M-A 048886	1 off	 
	3	3	6	3 - 60 s 0.15 - 3 min 0.5 - 10 min 3 - 60 min 0.15 - 3 h 0.5 - 10 h 3 - 60 h	400 V AC, 50/60 Hz	DILET11-M-W 048891	1 off	 
Multi-functional with remote potentiometer								
Timing functions → Page 8								
Component lifespan → Page 10								
	3	3	6	0.05 - 1 s 0.15 - 3 s	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	DILET70-A 048893	1 off	 
	3	3	6	0.2217925 - 10 s 3 - 60 s 0.15 - 3 min 0.5 - 10 min 3 - 60 min 0.15 - 3 h 0.5 - 10 h 3 - 60 h	400 V AC, 50/60 Hz	DILET70-W 048899	1 off	 

DILET

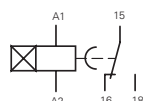
	Resistance R kΩ	Rated power P W	For use with	Part no. Article no.	Price See price list	Std. pack
Remote potentiometer, IP66						
	10	≤ 0.5	DILET... ETR4-70	M22-R10K 229491	1 off	 
	10	—	DILET... ETR4-70	M22S-R10K 232233	1 off	 
Screw adapters						
For screw fixing						
	—	—	EWDIL ETS4-VS3 ETR4	CS-TE 095853	10 off	 

Notes

Information relevant for export to North America



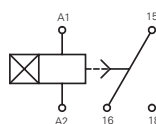
Fixed
11, On-delayed



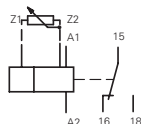
Product Standards

UL File No.
UL CCN
CSA File No.
CSA Class No.
NA Certification
Degree of Protection

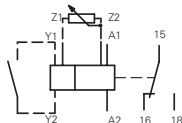
IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508;
CSA-22.2 No. 14-05; CE marking
E29184
NKCR, NKCR7
12528
3211-03
UL Listed, CSA certified
IEC: IP20, UL/CSA Type: -



Adjustable
11, On-delayed
21, Fleeting contact on energization
42, Flashing
81, Pulse generating
ON-OFF



Adjustable
12, Off-delayed
16, On- and off-delayed
22, Fleeting contact on de-energization
82, Pulse shaping
ON-OFF



Cable connection with
Y1/Y2, Z1/Z2

Permissible cable length
(cable unshielded, with
cable cross-section
0.5-1.5 mm²):

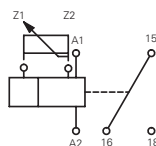
Two-core cable 250 m
Two-core cable in the
same cable duct with
mains cable, 50/60 Hz 50 m

Product Standards

UL File No.
UL CCN
CSA File No.
CSA Class No.
NA Certification
Degree of Protection

IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508;
CSA-22.2 No. 14-05; CE marking
E29184
NKCR, NKCR7
12528
3211-03
UL Listed, CSA certified
IEC: IP20, UL/CSA Type: -

11 ON-DELAYED
21 FLEETING CONTACT ON ENERGIZATION
42 FLASHING
81 PULSE GENERATING CONTACT



Information relevant for export to North America



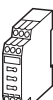
Product Standards IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No.94-91; CEmarking
UL File No. E29184
UL CCN NKCR
CSA File No. 12528
CSA Class No. 3211-03
NA Certification UL Listed, CSA certified
Degree of Protection UL/CSA part no. 3R, 4X, 12, 13

UL/CSA certification not required

Electronic relays

Timing relays

Electronic timing relays ETR4, 22.5 mm wide

	Rated operational current AC-15		Conventional thermal current I_{th} A	Time Range	24 - 240 V AC, 50/60 Hz 24 - 240 V DC		Std. pack	400 V AC, 50/60 Hz		Std. pack
	230 V I_e A	400 V I_e A			Part no. Article no.	Price See price list		Part no. Article no.	Price See price list	
 Star-delta switching Timing functions → Page 8	3	3	6	3 - 60 s	ETR4-51-A 031884		1 off  	ETR4-51-W 031885		1 off
 On-delayed Timing functions → Page 8	3	3	6	0.05 - 1 s 0.15 - 3 s 0.5 - 10 s 1.5 - 30 s 5 - 100 s 15 - 300 s	ETR4-11-A 031882		1 off  	ETR4-11-W 031883		1 off
 Multifunctional Timing functions → Page 8	3	3	6	1.5 - 30 min 15 - 300 min 1.5 - 30 h 5 - 100 h	ETR4-69-A 031891		1 off  	ETR4-69-W 031887		1 off
Multifunctional with connection for potentiometer, and two changeover contacts that can be converted to two timed contacts or one non-delayed contact and one timed contact. Timing functions → Page 8	3	—	6		ETR4-70-A 031888		1 off  			1 off

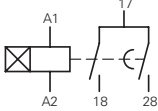
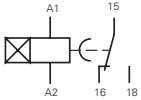
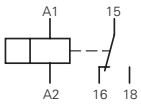
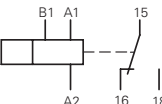
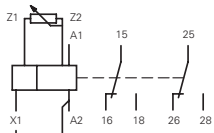
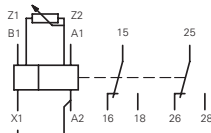
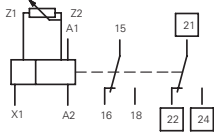
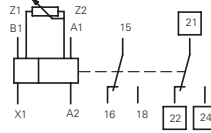
Notes

Information relevant for export to North America

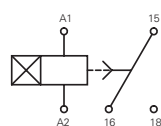


Product Standards	IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	12528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified
Degree of Protection	IEC: IP20, UL/CSA Type: -

Notes

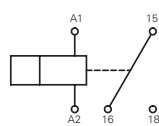
Function	Terminal marking according to EN 50042		Cable connection with B1, Z1/Z2	
Fixed			Permissible cable length (cable unshielded, with cable cross-section 0.5--1.5 mm²):	
51, Star-delta			Two-core cable 250 m	
Function	Terminal marking according to EN 50042		Two-core cable in the same cable duct with mains cable, 50/60 Hz	
Fixed			50 m	
11, On-delayed				
Function	Terminal marking according to EN 50042	Function	Terminal marking according to EN 50042	
Adjustable		Adjustable		
11, On-delayed		12, Off-delayed		
21, Fleeting contact on energization		16, On- and off-delayed		
42, Flashing, pulse initiating		22, Fleeting contact on de-energization		
81, Pulse generating ON-OFF		82, Pulse shaping ON-OFF		
Function	Terminal marking according to EN 50042	Function	Terminal marking according to EN 50042	
A2/X1 linked		A2/X1 linked		
11, On-delayed		12, Off-delayed		
21, Fleeting contact on energization		16, On- and off-delayed		
42, Flashing, pulse initiating		22, Fleeting contact on de-energization		
81, Pulse generating ON-OFF		82, Pulse shaping ON-OFF		
A2/X1 not linked		A2/X1 not linked		
11, On-delayed		12, Off-delayed		
21, Fleeting contact on energization		16, On- and Off-delayed		
42, Flashing, pulse initiating		22, Fleeting contact on de-energization		
81, Pulse generating ON-OFF		82, Pulse shaping ON-OFF		

ETR4-11



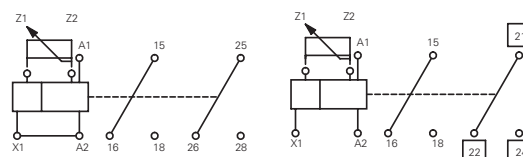
ON-DELAYED

ETR4-69



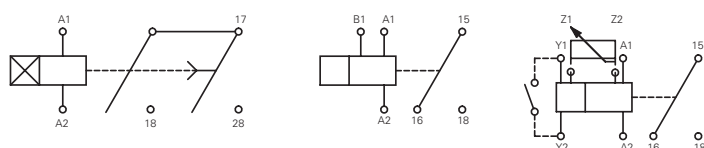
11 ON-DELAYED
21 FLEETING CONTACT ON ENERGIZATION
42 FLASHING
81 PULSE GENERATING CONTACT

ETR4-70



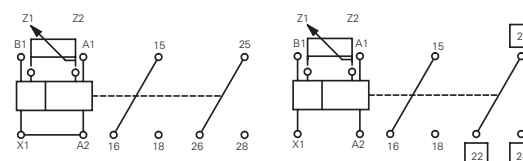
11 ON-DELAYED
21 FLEETING CONTACT ON ENERGIZATION
42 FLASHING
81 PULSE GENERATING CONTACT

ETR4-51



ON-DELAYED

12 OFF-DELAYED
16 ON- and OFF-DELAYED
22 FLEETING CONTACT ON DE-ENERGIZATION
82 PULSE SHAPING CONTACT

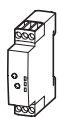
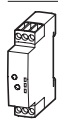
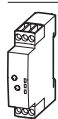
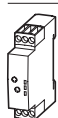
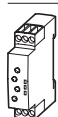
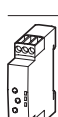
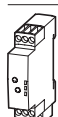
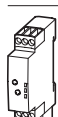
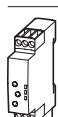


12 OFF-DELAYED
16 ON- and OFF-DELAYED
22 FLEETING CONTACT ON DE-ENERGIZATION
82 PULSE SHAPING CONTACT

Electronic relays

Timing relays

Electronic timing relays ETR2, 17.5 mm wide

		Rated operation current N/O 230 V	230 V (N/C)	Conventional thermal current	Time Range	Voltage range	Part no. Article no.	Price See price list	Std. pack
		I_e A	I_e A	I_{th} A					
One changeover contact									
	On-delayed Timing functions → Page 8 Load limit curves → Page 10	3	—	6	0.05 - 1 s 0.5 - 10 s 5 - 100 s 0.5 - 10 min 5 - 100 min 0.5 - 10 h 5 - 100 h	24 - 240 V AC, 50/60 Hz 24 - 48 V DC	ETR2-11 262684	1 off	 
	Off-delayed Timing functions → Page 8 Load limit curves → Page 10	3	—	6			ETR2-12 262686	1 off	 
	Fleeting contact on energization Timing functions → Page 8 Load limit curves → Page 10	3	—	6			ETR2-21 262687	1 off	 
	Flashing, pulse initiating Timing functions → Page 8 Load limit curves → Page 10	3	—	6			ETR2-42 262688	1 off	 
	Flashing, 2 speeds (ON/OFF times variable) Timing functions → Page 8 Load limit curves → Page 10	3	—	6			ETR2-44 262730	1 off	 
	Multifunction relay Timing functions → Page 8 Load limit curves → Page 10	3	—	6			ETR2-69 262689	1 off	 
Two changeover contacts									
	On-delayed Timing functions → Page 8 Load limit curves → Page 10	3	—	6	0.05 - 1 s 0.5 - 10 s 5 - 100 s 0.5 - 10 min 5 - 100 min 0.5 - 10 h 5 - 100 h	24 - 240 V AC, 50/60 Hz 24 - 48 V DC	ETR2-11-D 119426	1 off	 
	Off-delayed Timing functions → Page 8 Load limit curves → Page 10	3	—	6			ETR2-12-D 119427	1 off	 
	Multifunctional Timing functions → Page 8 Load limit curves → Page 10	3	0.75	6		12 - 240 V AC, 50/60 Hz	ETR2-69-D 119428	1 off	 

Information relevant for export to North America



Function Fixed 11, On-delayed	Terminal marking according to EN 50042 	Product Standards IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14-05; CE marking E29184 UL File No. UL CCN CSA File No. CSA Class No. NA Certification Degree of Protection	IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14-05; CE marking E29184 NKCR,NKCR7 UL report valid 3211-03 UL Listed, Certified by UL for use in Canada IEC: IP20, UL/CSA Type: -
Function Fixed 12, Off-delayed	Terminal marking according to EN 50042 		
Function Fixed 21, Fleeting contact on energization	Terminal marking according to EN 50042 		
Function Fixed 42, Flashing, pulse initiating	Terminal marking according to EN 50042 		
Function Fixed 44, Flashing, 2 variable times Can be set to either pulse or pause initiating	Terminal marking according to EN 50042 		
Function Adjustable 11, On-delayed 21, Fleeting contact on energization 42, Flashing, pulse initiating 43, Flashing, pause initiating	Terminal marking according to EN 50042 	Function Adjustable 12, Off-delayed 22, Fleeting contact on de-energization 82, Pulse shaping	Terminal marking according to EN 50042
Function Fixed 11, On-delayed	Terminal marking according to EN 50042 	Product Standards IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14-05; CE marking E29184 UL File No. UL CCN CSA File No. CSA Class No. NA Certification Degree of Protection	IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14-05; CE marking E29184 NKCR,NKCR7 UL report valid 3211-03 UL Listed, Certified by UL for use in Canada IEC: IP20, UL/CSA Type: -
Function Fixed 12, Off-delayed	Terminal marking according to EN 50042 		
Function Adjustable 11, On-delayed 21, Fleeting contact on energization 42, Flashing, pulse initiating 43, Flashing, pause initiating	Terminal marking according to EN 50042 	Function Adjustable 12, Off-delayed 22, Fleeting contact on de-energization 82, Pulse shaping	Terminal marking according to EN 50042

Electronic relays

Timing relays

Engineering

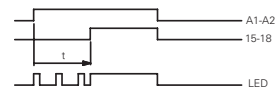
DILET, ETR

Electronic timing relays

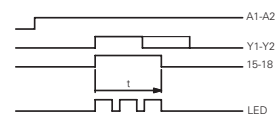
DILET

Contact sequence diagram

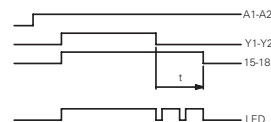
11 On-delayed



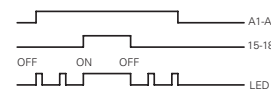
82 Pulse shaping



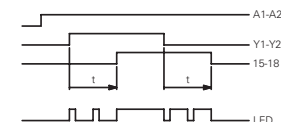
12 Off-delayed



On-Off function

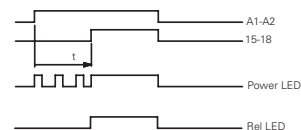


16 On- and Off-delayed

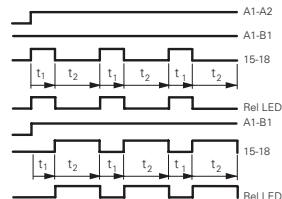


ETR2..., ETR4...

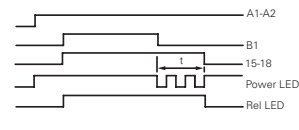
11 On-delayed



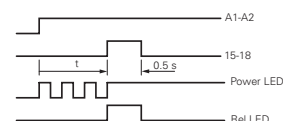
44 Flashing, 2 speeds



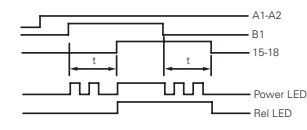
12 Off-delayed



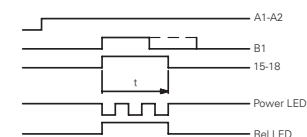
81 Pulse generating



16 On- and Off-delayed

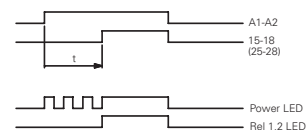


82 Pulse shaping

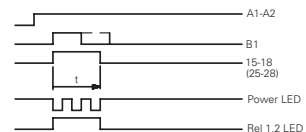


ETR4-70...
A2/X1 linked

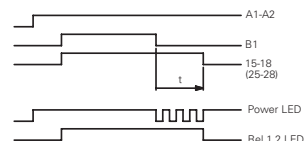
11 On-delayed



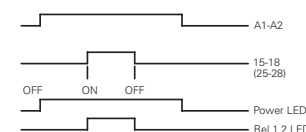
82 Pulse shaping



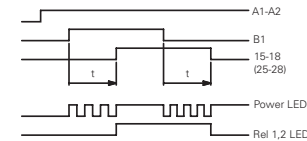
12 Off-delayed



On-Off function

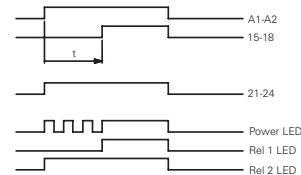


16 On- and Off-delayed

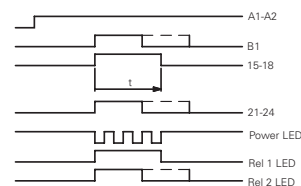


ETR4-70...
A2/X1 not linked

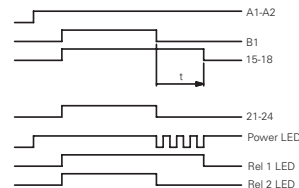
11 On-delayed



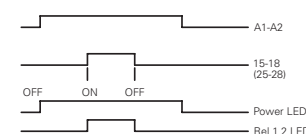
82 Pulse shaping



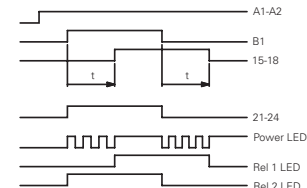
12 Off-delayed



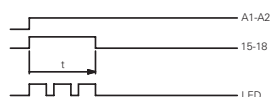
On-Off function



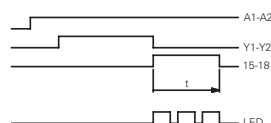
16 On- and Off-delayed



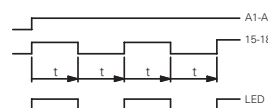
21 Fleeting contact on energization



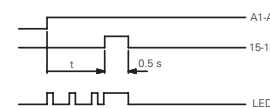
22 Fleeting contact on de-energization



42 Flashing, pulse initiating



81 Pulse generating



Legend to contact sequence diagrams

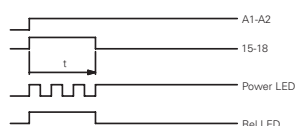
LED display

Time not running,
Contact 15 – 18 closed

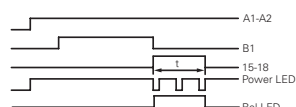
Time running,
Contact 15 – 18 closed

Time running,
Contact 15 – 18 not closed

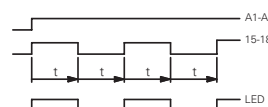
21 Fleeting contact on energization



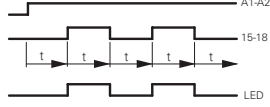
22 Fleeting contact on de-energization



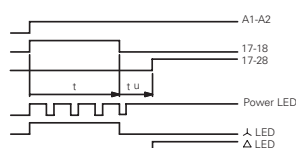
42 Flashing, pulse initiating



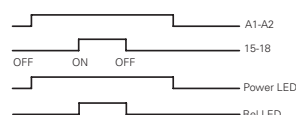
43 Flashing, pause initiating



51 Star-delta



On-Off function



Legend to contact sequence diagrams

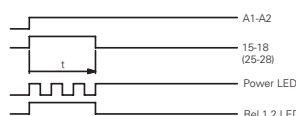
LED display

Time not running,
Contact 15 – 18 closed

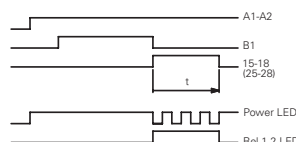
Time running,
Contact 15 – 18 closed

Time running,
Contact 15 – 18 not closed

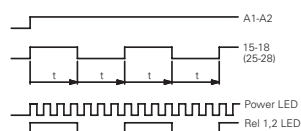
21 Fleeting contact on energization



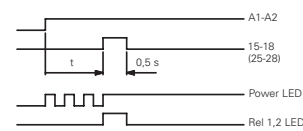
22 Fleeting contact on de-energization



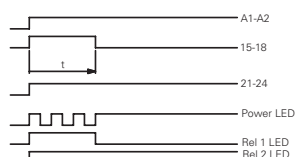
42 Flashing



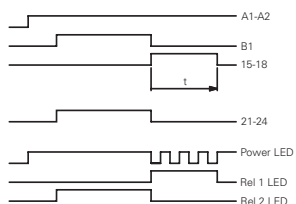
81 Pulse generating



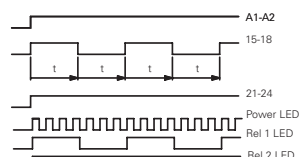
21 Fleeting contact on energization



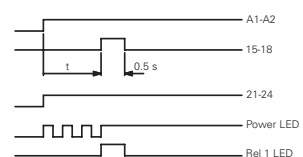
22 Fleeting contact on de-energization



42 Flashing



81 Pulse generating



Legend to contact sequence diagrams

LED display

Time not running,
Contact 15 – 18 closed

Time running,
Contact 15 – 18 closed

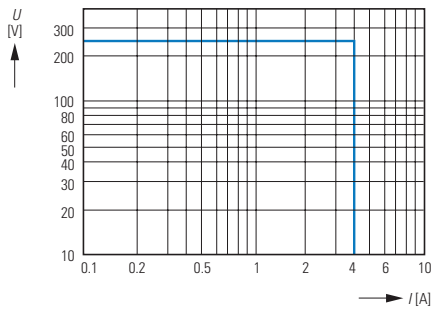
Time running,
Contact 15 – 18 not closed

Electronic relays

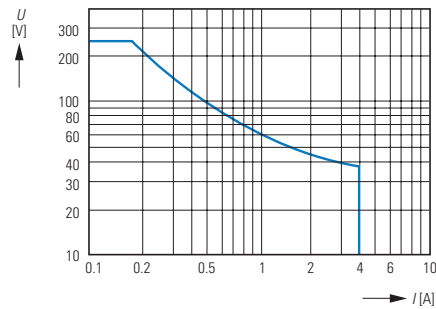
Timing relays

Load limit curves, ETR2-11/12/21/42/44/69

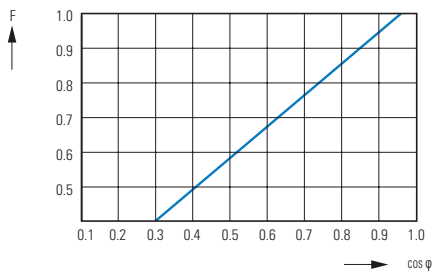
AC load (resistive)



DC load (resistive)

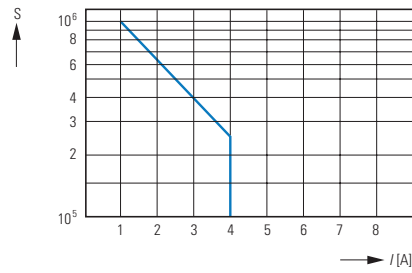


Derating factor with inductive AC load



Derating factor F with inductive load

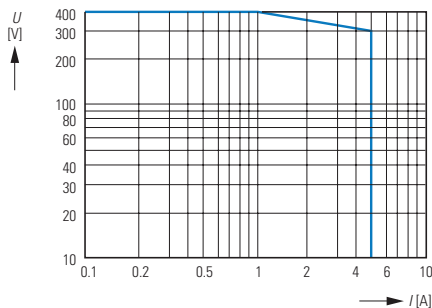
Contact life



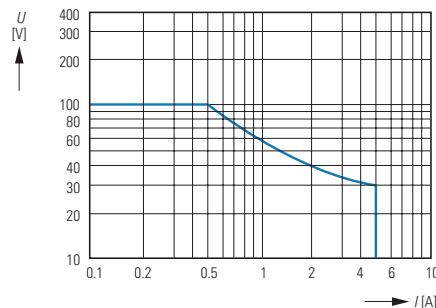
Contact life
Operations S
220 V 50 Hz AC-1
360 operations/h

Load limit curves, ETR2...-D

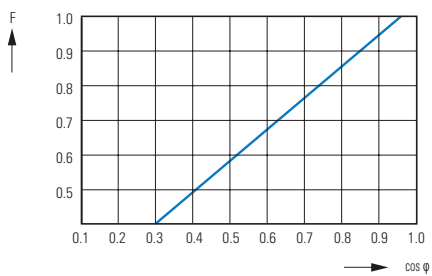
AC load (resistive)



DC load (resistive)

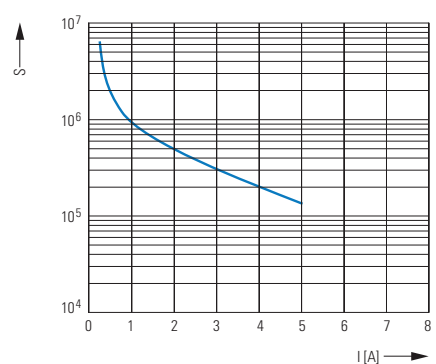


Derating factor with inductive AC load



Derating factor F with inductive load

Contact life

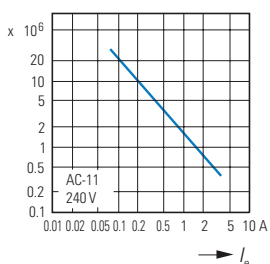


Contact life
Operations S
220 V 50 Hz AC-1
360 operations/h

DILET (AC-11)

Component lifespan (operations)

I_e = Rated operational current



DILET, ETR4

			unit	DILET-A	DILET-W	ETR4-A	ETR4-W
General							
Standards				IEC/EN 61812 VDE 0435	IEC/EN 61812 VDE 0435	IEC/EN 61812 VDE 0435	IEC/EN 61812 VDE 0435
Lifespan, mechanical							
AC operated	Switch operations	x 10 ⁶	30	30	30	30	
DC operated	Switch operations	x 10 ⁶	30	30	30	30	
Climatic proofing			Damp heat, constant, to IEC 60068-2-78; Damp heat, cyclic, to IEC 60068-2-30				
Ambient temperature							
Storage		°C			-45 - 60	-45 - 60	
Open		°C	-20 - 60	-20 - 60	-25 - 60	-25 - 60	
Encapsulated		°C	-20 - 45	-20 - 45	-25 - 45	-25 - 45	
Mounting position			Any	Any	Any	Any	
Mechanical shock resistance (IEC/EN 60068-2-27)							
Half-sinusoidal shock 20 ms							
N/O		g	4	4	4	4	
Degree of protection							
Clamps			IP20	IP20	IP20	IP20	
Weight		kg	0.09	0.09	0.1	0.1	
Terminal capacity							
Solid		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	
Flexible with ferrule		mm ²	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	1 x (0.75 - 1.5) 2 x (0.75 - 1.5)	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	1 x (0.75 - 2.5) 2 x (0.75 - 1.5)	
Solid or stranded		AWG	1 x (18 - 14)	1 x (18 - 14)	1 x (20 - 14)	1 x (20 - 14)	
Contacts							
Rated impulse withstand voltage	U _{imp}	V AC	6000	6000	6000	6000	
Overvoltage category/pollution degree			III/2	III/2	III/2	III/2	
Rated insulation voltage	U _i	V AC	600	600	600	600	
Rated operating voltage	U _e	V AC	440	440	440	440	
Safe isolation according to EN 61140							
Between coil and auxiliary contacts		V AC	250	250	250	250	
Between the auxiliary contacts		V AC	250	250	250	250	
Making capacity							
AC-14 p.f. φ = 0.3 440 V		A	48	48	48	48	
AC-15 p.f. φ = 0.3 220 V		A	50	50	50	50	
DC-11 L/R $\leq$ 40 ms		x I _e	1.1	1.1	1.1	1.1	
Breaking capacity							
AC-14 p.f. φ = 0.3 440 V		A	3	3	3	3	
AC-15 p.f. φ = 0.3 220 V		A	3	3	3	3	
DC-11 L/R $\leq$ 40 ms		x I _e	1.1	1.1	1.1	1.1	
Rated operation current							
AC-14							
440 V	I _e	A	3	3	3	3	
AC-15							
220 V (230 V)	I _e	A	3	3	3	3	
DC-11 ¹⁾							
L/R max. 15 ms							
24 V	I _e	A	1.5	1.5	1.5	1.5	
L/R max. 50 ms		A	1.2	1.2	1.2	1.2	
Conventional thermal current	I _{th}	A	6	6	6	6	
General use							
AC operated		V	250	250	250	250	
AC operated		A	6	6	6	6	
Pilot duty							
AC operated			B300	B300	B300	B300	
Short-circuit rating without welding ²⁾							
Max. fuse, N/O (normally open)		A gG/gL	6	6	6	6	
Max. fuse, N/C (normally closed)		A gG/gL	6	6	6	6	
Max. overcurrent protective device, 220/230 V		Part no.	—	—	FAZ-B4/1-HI	FAZ-B4/1-HI	

Notes¹⁾ Making and breaking conditions to DC13, time constant as stated²⁾ When supplied directly from mains or transformer > 1000 VA

Electronic relays

Timing relays

DILET, ETR4

	unit	DILET-A	DILET-W	ETR4-A	ETR4-W
Magnet systems					
Rated operating voltage					
AC		24 - 240	400	24 - 240	400
DC		24 - 240	—	24 - 240	—
Rated frequency					
	Hz	47 - 63	47 - 63	47 - 63	47 - 63
AC operated	Pick-up x U _c	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1	0.85 - 1.1
DC operated	Pick-up x U _c	0.7 - 1.1	—	0.7 - 1.1	—
Power consumption					
AC pick-up rating	VA	2	0.5	2	0.5
AC holding rating	VA	2	0.5	2	0.5
DC pick-up rating	W	1.8	—	1.8	—
DC holding rating	W	1.8	—	1.8	—
Duty factor					
	% duty factor	100	100	100	100
Maximum operating frequency					
	Ops/h	4000	4000	4000	4000
Minimum command time					
AC	ms	50	50	50	50
DC	ms	30	—	30	—
Repetition accuracy (deviation)					
	%	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5
Recovery time (after 100% time delay)					
	ms	70	70	70	70
Contact changeover time ¹⁾	t _u ms	—	—	4	4
Electromagnetic compatibility (EMC)					
Electrostatic discharge (IEC/EN 61000-4-2, Level 3, ESD)					
Air discharge	kV	8	8	8	8
Contact discharge	kV	6	6	6	6
Electromagnetic fields (IEC/EN 61000-4-3, RFI)					
	V/m	10	10	10	10
Radio interference suppression (EN 55011)					
		EN 55011 Class A	EN 55011 Class A	EN 55011 Class A	EN 55011 Class A
Burst pulses (IEC/EN 61000-4-4, level 3)					
		2	2	2	2
High-energy pulses (surge) (IEC/EN 61000-4-5, level 2)					
	kV	1	1	1	1
Immunity to line-conducted interference (IEC/EN 61000-4-6)					
	V	10	10	10	10
Notes					
	¹⁾ ETR4-51: 50 ms				

Technical data

ETR2

Part no.	ETR2-11(12, 21, 42, 44, 69)	ETR2-69-D	ETR2-11-D/ETR2-12-D
Input circuit - power supply circuit			
Rated control voltage U_S			
A1 - A2	24 - 240 V AC/24 - 48 V DC	12-240 V AC/DC	24 - 240 V AC/24 - 48 V DC
Tolerance of rated control voltage U_S	-15 - +10 %	-15 - +10 %	-15 - +10 %
Rated frequency	DC or 50/60 Hz	DC or 50/60 Hz	DC or 50/60 Hz
Frequency range	DC or 47 - 63 Hz	DC or 47 - 63 Hz	DC or 47 - 63 Hz
Typical current/power consumption			
12 V DC	—	35 mA	—
24 V DC	0.6 W	—	24.1 mA
230 V AC	1.3 VA	6.25 mA	31.3 mA
115 V AC	1.3 VA	34.25 mA	20 mA
Mains failure buffering time	min. 30 ms	min. 30 ms	min. 30 ms
Input circuit - control circuit			
Type of actuation	Non-isolated actuation	Non-isolated actuation	Non-isolated actuation
Control input, control function	External time start	External time start	External time start
Parallel connection possible/polarized	Yes/yes	Yes/yes	Yes/yes
Maximum cable length at the control inputs	50 m - 100 pF/m	50 m - 100 pF/m	50 m - 100 pF/m
Minimum control pulse length/duration	30 ms	30 ms	30 ms
Control voltage potential	see Rated control voltage	see Rated control voltage	see Rated control voltage
Power consumption of control input			
12 V DC	—	0.018 mA	—
24 V DC	—	—	0.92 mA
230 V AC	—	0.01 mA	6.43 mA
115 V AC	—	0.01 mA	3.27 mA
Timing circuit			
Time ranges			
7 time ranges 0.05 s - 100 h	0.05 - 1 s, 0.5 - 10 s, 5 - 100 s, 0.5 - 10 min, 5 - 100 min, 0.5 - 10 h, 5 - 100 h	0.05 - 1 s, 0.5 - 10 s, 5 - 100 s, 0.5 - 10 min, 5 - 100 min, 0.5 - 10 h, 5 - 100 h	0.05 - 1 s, 0.5 - 10 s, 5 - 100 s, 0.5 - 10 min, 5 - 100 min, 0.5 - 10 h, 5 - 100 h
Recovery time	< 50 ms	< 50 ms	< 50 ms
Accuracy within the rated control voltage tolerance	$\Delta t < 0.005 \% / V$	$\Delta t < 0.005 \% / V$	$\Delta t < 0.005 \% / V$
Accuracy within temperature range	$\Delta t < 0.06 \% / ^\circ C$	$\Delta t < 0.06 \% / ^\circ C$	$\Delta t < 0.06 \% / ^\circ C$
Operating status indication			
U control voltage/time running: green LED	Continuous light: control voltage present; slow flashing: time running		
Relay status R: yellow LED	Continuous light: output relay 1 picked up	Continuous light: output relay 1 or 2 picked up	Continuous light: output relay 1 or 2 picked up
Output circuits			
Output type			
15 - 16/18	Relay, 1 changeover contact	—	—
15 - 16/18; 25 - 26/28	—	Relay, 2 changeover contacts	Relay, 2 changeover contacts
Contact material	Cadmium-free	Cadmium-free	Cadmium-free
Rated operational voltage U_e	250 V	250 V	250 V
Minimum switching voltage/minimum switching current	12 V/100 mA	12 V/100 mA	12 V/100 mA
Rated operational current (IEC 60947-5-1)			
AC12 (resistive) 230 V	6 A	5 A	5 A
AC15 (inductive) 230 V N/O	3 A	3 A	3 A
AC15 (inductive) 230 V N/C	3 A	0.75 A	0.75 A
DC12 (resistive) 24 V	6 A	5 A	5 A
DC13 (inductive) 24 V N/O	2 A	3 A	3 A
DC13 (inductive) 24 V N/C	2 A	1 A	1 A
Rated operational data AC (UL 508)			
Utilization category (Control Circuit Rating Code)	B300	N/O: B300; N/C: C300	N/O: B300; N/C: C300
Max. rated operational voltage	300 V AC	300 V AC	300 V AC
Max. thermal continuous current	at B300 = 5 A	at B300 = 5 A; at C300 = 2.5 A	at B300 = 5 A; at C300 = 2.5 A
Max. input/output rating (N/O / N/C)	at B300 = 3600/360 VA	at B300 = 3600/360 VA; at C300 = 1800/180 VA	at B300 = 3600/360 VA; at C300 = 1800/180 VA
Mechanical lifespan	30 x 10 ⁶ operations	30 x 10 ⁶ operations	30 x 10 ⁶ operations
Electrical lifespan (AC12, 230 V, 4 A)	0.1 x 10 ⁶ operations	0.1 x 10 ⁶ operations	0.1 x 10 ⁶ operations
Short-circuit rating, max. fuse (IEC/EN 60947-5-1)			
N/C	6 A fast	6 A fast	6 A fast
N/O	10 A fast	10 A fast	10 A fast

Electronic relays

Timing relays

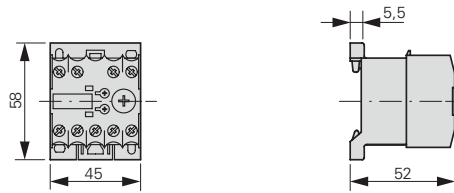
ETR2

Part no.	ETR2-11(12, 21, 42, 44, 69)	ETR2-69-D	ETR2-11-D/ETR2-12-D
General data			
Duty factor (DF)	100 %	100 %	100 %
Repetition accuracy (constant parameters)	$\Delta t < 0.5 \%$	$\Delta t < 0.5 \%$	$\Delta t < 0.5 \%$
Weight	0.060 kg	0.065 kg	0.065 kg
Enclosure measurements (w x h x d)	17.5 mm x 70 mm x 58 mm (0.69 x 2.76 x 2.28 inches)	17.5 mm x 80 mm x 58 mm (0.69 x 3.15 x 2.28 inches)	17.5 mm x 80 mm x 58 mm (0.69 x 3.15 x 2.28 inches)
Mounting position	Any	Any	Any
Degree of protection of enclosures/terminals	IP50/IP20	IP50/IP20	IP50/IP20
Minimum horizontal/vertical distance to adjacent devices	None/none	None/none	None/none
Mounting	DIN rail (IEC/EN 60715), clip-type toolless	DIN rail (IEC/EN 60715), clip-type toolless	DIN rail (IEC/EN 60715), clip-type toolless
Electrical connection			
Terminal capacity			
Flexible with/without ferrule	2 x 0.5 - 1.5 mm ² (2 x 20 - 16 AWG)/ 1 x 0.5 - 2.5 mm ² (1 x 20 - 14 AWG)	3 x 0.5 - 1.5 mm ² (2 x 20 - 16 AWG)/ 1 x 0.5 - 2.5 mm ² (1 x 20 - 14 AWG)	4 x 0.5 - 1.5 mm ² (2 x 20 - 16 AWG)/ 1 x 0.5 - 2.5 mm ² (1 x 20 - 14 AWG)
Rigid	2 x 0.5 - 1.5 mm ² (2 x 20 - 16 AWG) 1 x 0.5 - 4 mm ² (1 x 20 - 12 AWG)	2 x 0.5 - 1.5 mm ² (2 x 20 - 16 AWG) 1 x 0.5 - 4 mm ² (1 x 20 - 12 AWG)	2 x 0.5 - 1.5 mm ² (2 x 20 - 16 AWG) 1 x 0.5 - 4 mm ² (1 x 20 - 12 AWG)
Stripped length	7 mm (0.28 inches)	7 mm (0.28 inches)	7 mm (0.28 inches)
Tightening torque	0.5 - 0.8 Nm	0.5 - 0.8 Nm	0.5 - 0.8 Nm
Environmental data			
Ambient temperature range, operation/storage	-20 - +60 °C/-40 - +85 °C	-20 - +60 °C/-40 - +85 °C	-20 - +60 °C/-40 - +85 °C
Damp heat (cyclic) (IEC/EN 60068-2-30)	6 x 24 h cycle, 55 °C, 95 % RH	6 x 24 h cycle, 55 °C, 95 % RH	6 x 24 h cycle, 55 °C, 95 % RH
Vibration (sinusoidal) (IEC/EN 60068-2-6)	40 m/s ² , 20 cycles, 10...150...10 Hz	40 m/s ² , 20 cycles, 10...150...10 Hz	40 m/s ² , 20 cycles, 10...150...10 Hz
Impact (half-sinusoidal) (IEC/EN 60068-2-27)	100 m/s ² , 11 ms	100 m/s ² , 11 ms	100 m/s ² , 11 ms
Insulation data			
Rated impulse withstand voltage Uimp between all insulated circuits (VDE 0110, IEC/EN 60664-1)	4 kV; 1.2/50 µs	4 kV; 1.2/50 µs	4 kV; 1.2/50 µs
Pollution degree (IEC/EN 60664-1, VDE 0110, UL 508)	3	3	3
Overvoltage category (IEC/EN 60664-1, VDE 0110, UL 508)	III	III	III
Rated insulation voltage Ui			
Input circuit/output circuit	300V	300V	300V
Output circuit 1/output circuit 2	300 V	300 V	300 V
Basic isolation (IEC/EN 61140) input circuit/output circuit	300 V	300 V	300 V
Safe isolation (VDE 0106 Part 101 and Part 101/A1; IEC/EN 61140) input circuit/output circuit	250 V	250 V	250 V
Power-frequency withstand voltage test (test voltage, part test) between all insulated circuits	2.5 kV, 50 Hz, 1s	2.5 kV, 50 Hz, 1s	2.5 kV, 50 Hz, 1s
Directives and standards			
Product standard	IEC 61812-1, EN 61812-1 + A11, DIN VDE 0435 Part 2021	IEC 61812-1, EN 61812-1 + A11, DIN VDE 0435 Part 2021	IEC 61812-1, EN 61812-1 + A11, DIN VDE 0435 Part 2021
Low-Voltage Directive	2006/95/EC	2006/95/EC	2006/95/EC
EMC Directive	2004/108/EC	2004/108/EC	2004/108/EC
RoHS Directive	2002/95/EC	2002/95/EC	2002/95/EC
Electromagnetic compatibility			
Interference immunity	IEC/EN 61000-6-1, IEC/EN 61000-6-2	IEC/EN 61000-6-1, IEC/EN 61000-6-2	IEC/EN 61000-6-1, IEC/EN 61000-6-2
Electrostatic discharge (ESD) IEC/EN 61000-4-2	Level 3 (6 kV/8 kV)	Level 3 (6 kV/8 kV)	Level 3 (6 kV/8 kV)
Electromagnetic field (immunity to RF interference) IEC/EN 61000-4-3	Level 3 (10 V/m)	Level 3 (10 V/m)	Level 3 (10 V/m)
Fast transients (burst) IEC/EN 61000-4-4	Level 3 (2 kV/5 kHz)	Level 3 (2 kV/5 kHz)	Level 3 (2 kV/5 kHz)
High-energy pulses (surge) IEC/EN 61000-4-5	Level 4 (2 kV L-L)	Level 4 (2 kV L-L)	Level 4 (2 kV L-L)
Cable-borne HF IEC/EN 61000-4-6	Level 3 (10 V)	Level 3 (10 V)	Level 3 (10 V)
Emitted interference	IEC/EN 61000-6-3, IEC/EN 61000-6-4	IEC/EN 61000-6-3, IEC/EN 61000-6-4	IEC/EN 61000-6-3, IEC/EN 61000-6-4
Electromagnetic field (resistance to RF interference) IEC/CISPR 22, EN 55022	Class B	Class B	Class B
Cable-borne HF IEC/CISPR 22; EN 55022	Class B	Class B	Class B

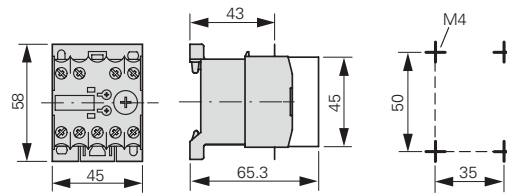
Dimensions

Electronic timing relays

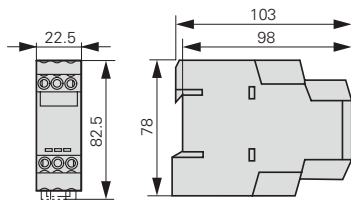
DILET...



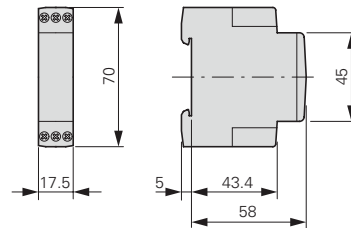
DILET...+HDILE



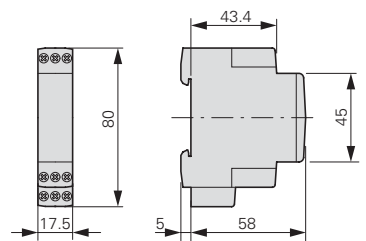
ETR4-...



ETR2-...
250 x 006



ETR2-...-D



Potentiometers

M22-R...K...

