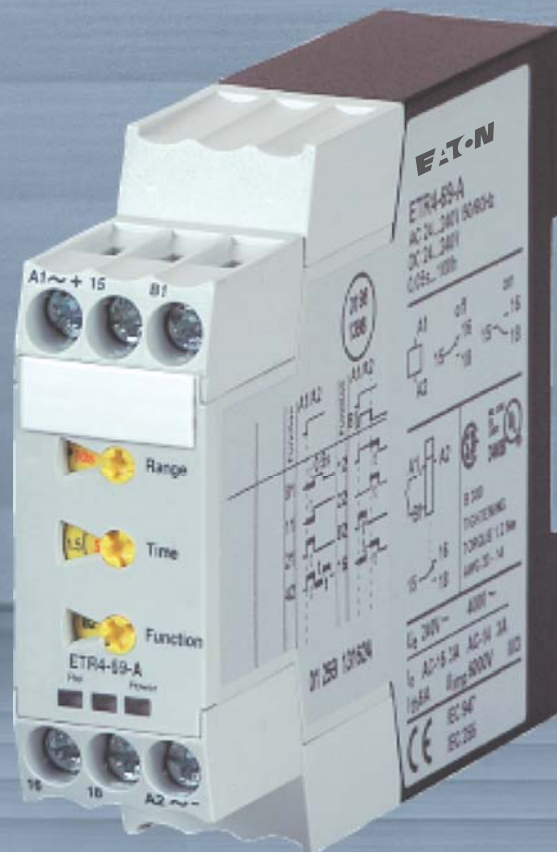
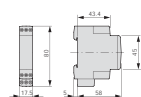


ETR timing relay



EATON

Powering Business Worldwide



Ordering

DILET timing relays	2
ETR4 timing relays	4
ETR2 timing relays	6

Engineering

DILET, ETR timing relay	
Contact sequence diagram	8
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Technical data

DILET, ETR4 timing relays	11
ETR2 timing relays	13

Dimensions

DILET, ETR timing relays	15
------------------------------------	----

Electronic relays

Timing relays

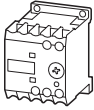
Timing relays DILET

	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

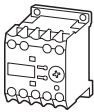


3	3	6	1.5 - 30 s	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	DILET11-30-A 048878	1 off	
3	3	6	1.5 - 30 s	400 V AC, 50/60 Hz	DILET11-30-W 048904	1 off	
3	3	6	0.05 - 1 s 0.15 - 3 s	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	DILET11-M-A 048886	1 off	
3	3	6	0.5 - 10 s 3 - 60 s 0.15 - 3 min 0.5 - 10 min 3 - 60 min 0.15 - 3 h 0.5 - 10 h 3 - 60 h	400 V AC, 50/60 Hz	DILET11-M-W 048891	1 off	

Multi-functional with remote potentiometer

Timing functions → Page 8

Component lifespan → Page 10

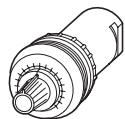


3	3	6	0.05 - 1 s 0.15 - 3 s	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	DILET70-A 048893	1 off	
3	3	6	0.2217925 - 10 s 3 - 60 s 0.15 - 3 min 0.5 - 10 min 3 - 60 min 0.15 - 3 h 0.5 - 10 h 3 - 60 h	400 V AC, 50/60 Hz	DILET70-W 048899	1 off	

DILET

	Resistance	Rated power	For use with	Part no. Article no.	Price See price list	Std. pack
	R	P				
	k Ω	W				

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



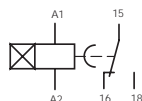
–	–	EWDIL ETS4-VS3 ETR4	CS-TE 095853	10 off	
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Notes

Information relevant for export to North America



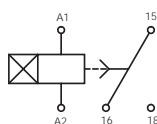
Fixed
11, On-delayed



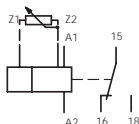
Product Standards

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

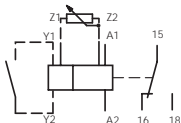


Product Standards

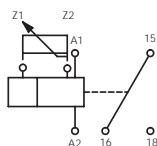
UL File No.
UL CCN
CSA File No.
CSA Class No.
NA Certification
Degree of Protection

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



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



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

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

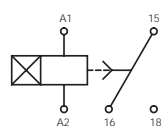


Product Standards	IEC/EN 61812-1; IEC/EN 60947-5-1; UL 508; CSA-22.2 No. 14-05; CE marking
UL File No.	E29184
UL CCN	NKCR
CSA File No.	12528
CSA Class No.	3211-03
NA Certification	UL Listed, CSA certified
Degree of Protection	IEC: IP20, UL/CSA Type: -

Notes

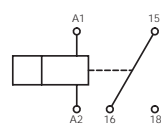
Function	Terminal marking according to EN 50042	Cable connection with B1, Z1/Z2	
Fixed 51, Star-delta		Permissible cable length (cable unshielded, with cable cross-section 0.5--1.5 mm ²):	
		Two-core cable	250 m
		Two-core cable in the same cable duct with mains cable, 50/60 Hz	50 m
Function	Terminal marking according to EN 50042	Function	Terminal marking according to EN 50042
Fixed 11, On-delayed		Adjustable 12, Off-delayed 16, On- and off-delayed 22, Fleeting contact on de-energization 82, Pulse shaping ON-OFF	
Function	Terminal marking according to EN 50042	Function	Terminal marking according to EN 50042
Adjustable 11, On-delayed 21, Fleeting contact on energization 42, Flashing, pulse initiating 81, Pulse generating ON-OFF		A2/X1 linked 12, Off-delayed 16, On- and off-delayed 22, Fleeting contact on de-energization 82, Pulse shaping ON-OFF	
Function	Terminal marking according to EN 50042	Function	Terminal marking according to EN 50042
A2/X1 linked 11, On-delayed 21, Fleeting contact on energization 42, Flashing, pulse initiating 81, Pulse generating ON-OFF		A2/X1 not linked 12, Off-delayed 16, On- and Off-delayed 22, Fleeting contact on de-energization 82, Pulse shaping ON-OFF	
A2/X1 not linked 11, On-delayed 21, Fleeting contact on energization 42, Flashing, pulse initiating 81, Pulse generating ON-OFF			

ETR4-11



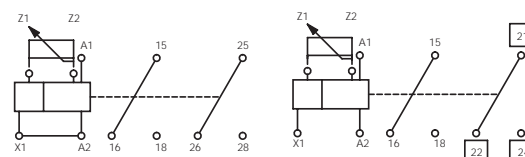
ON-DELAYED

ETR4-69



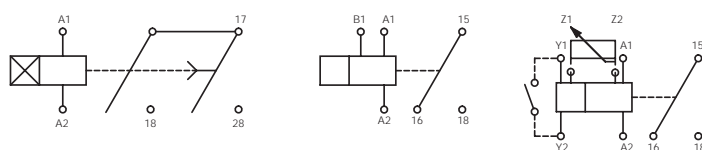
11 ON-DELAYED
21 FLEETING CONTACT ON ENERGIZATION
42 FLASHING
81 PULSE GENERATING CONTACT

ETR4-70



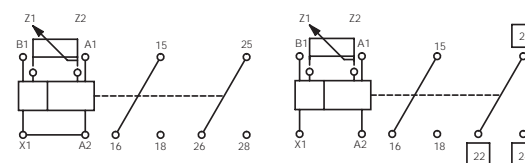
11 ON-DELAYED
21 FLEETING CONTACT ON ENERGIZATION
42 FLASHING
81 PULSE GENERATING CONTACT

ETR4-51



ON-DELAYED

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

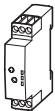


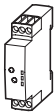


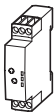


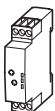


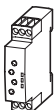


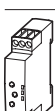


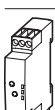


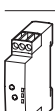


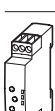




12 OFF-DELAYED
16 ON- and OFF-DELAYED
22 FLEETING CONTACT ON DE-ENERGIZATION
82 PULSE SHAPING CONTACT

Electronic relays

Timing relays

Electronic timing relays ETR2, 17.5 mm wide

	Rated operation current		Conventional thermal current	Time Range	Voltage range	Part no. Article no.	Price See price list	Std. pack	
	N/O 230 V	230 V (N/C)							
	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 UL File No. E29184 UL CCN NKCR,NKCR7 CSA File No. UL report valid CSA Class No. 3211-03 NA Certification UL Listed, Certified by UL for use in Canada Degree of Protection 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
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 UL File No. E29184 UL CCN NKCR,NKCR7 CSA File No. UL report valid CSA Class No. 3211-03 NA Certification UL Listed, Certified by UL for use in Canada Degree of Protection 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

Electronic relays

Timing relays

Engineering

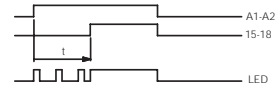
DILET, ETR

Electronic timing relays

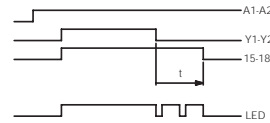
Contact sequence diagram

DILET

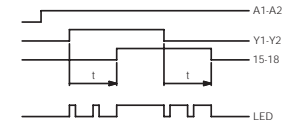
11 On-delayed



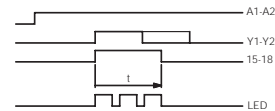
12 Off-delayed



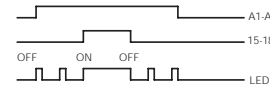
16 On- and Off-delayed



82 Pulse shaping

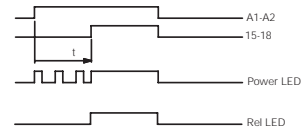


On-Off function

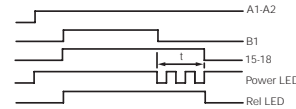


ETR2..., ETR4...

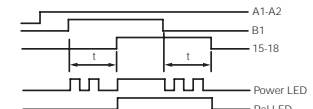
11 On-delayed



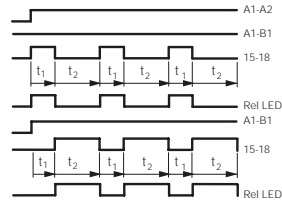
12 Off-delayed



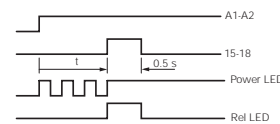
16 On- and Off-delayed



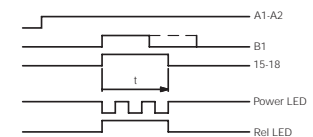
44 Flashing, 2 speeds



81 Pulse generating

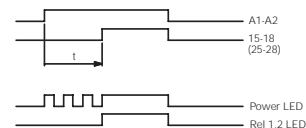


82 Pulse shaping

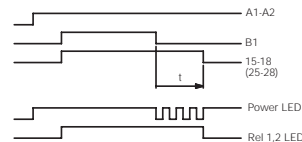


ETR4-70...
A2/X1 linked

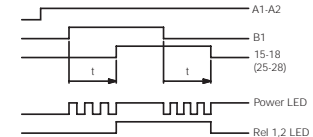
11 On-delayed



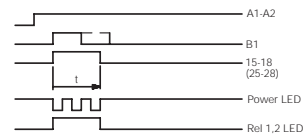
12 Off-delayed



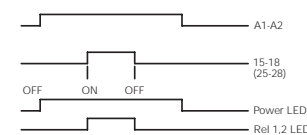
16 On- and Off-delayed



82 Pulse shaping

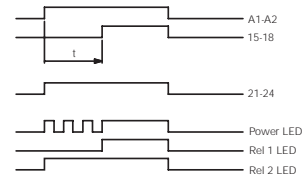


On-Off function

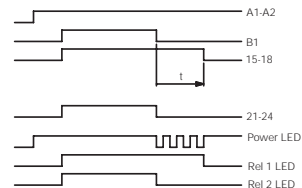


ETR4-70...
A2/X1 not linked

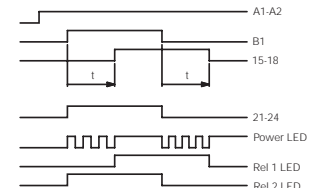
11 On-delayed



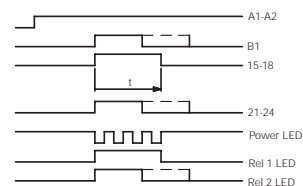
12 Off-delayed



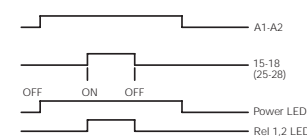
16 On- and Off-delayed



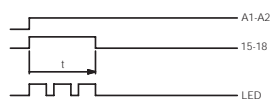
82 Pulse shaping



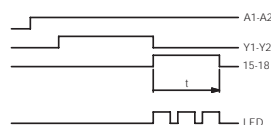
On-Off function



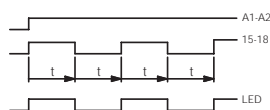
21 Fleeting contact on energization



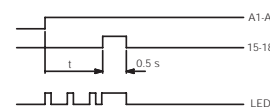
22 Fleeting contact on de-energization



42 Flashing, pulse initiating



81 Pulse generating

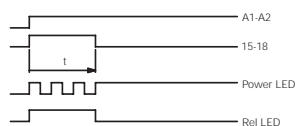


Legend to contact sequence diagrams

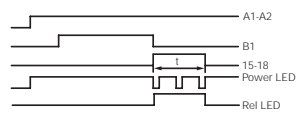
LED display



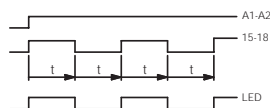
21 Fleeting contact on energization



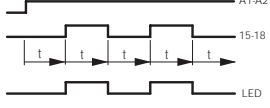
22 Fleeting contact on de-energization



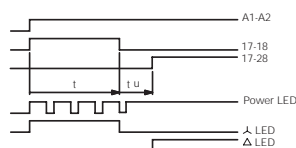
42 Flashing, pulse initiating



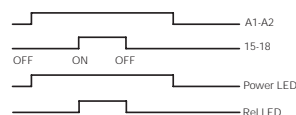
43 Flashing, pause initiating



51 Star-delta



On-Off function

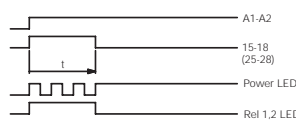


Legend to contact sequence diagrams

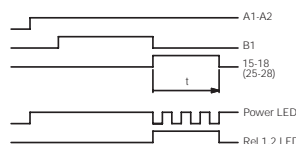
LED display



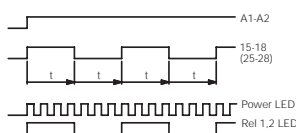
21 Fleeting contact on energization



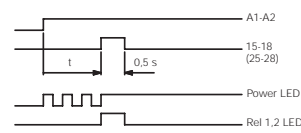
22 Fleeting contact on de-energization



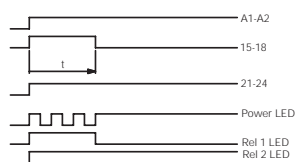
42 Flashing



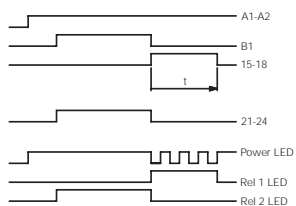
81 Pulse generating



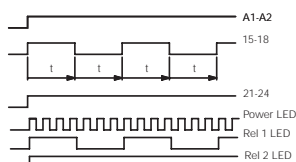
21 Fleeting contact on energization



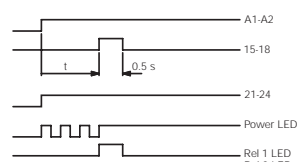
22 Fleeting contact on de-energization



42 Flashing



81 Pulse generating



Legend to contact sequence diagrams

LED display

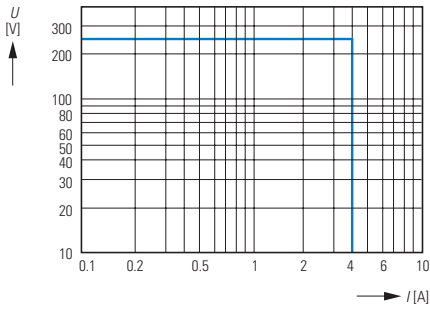


Electronic relays

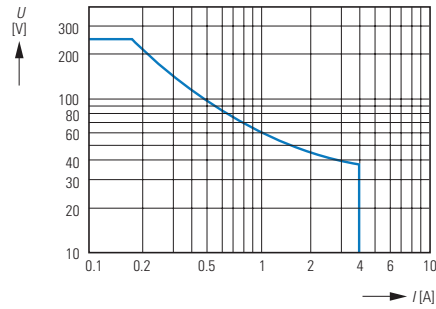
Timing relays

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

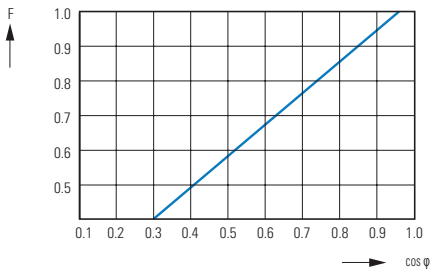
AC load (resistive)



DC load (resistive)

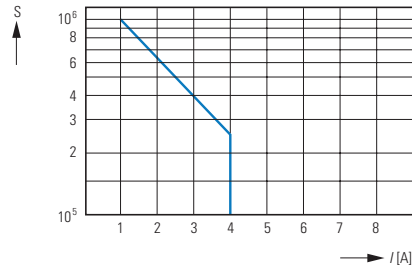


Derating factor with inductive AC load



Derating factor F with inductive load

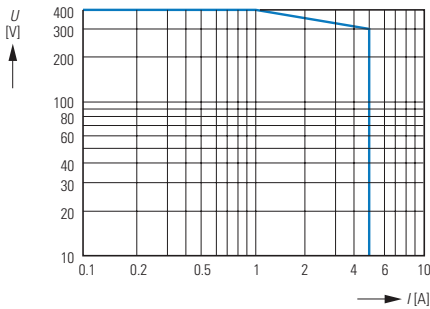
Contact life



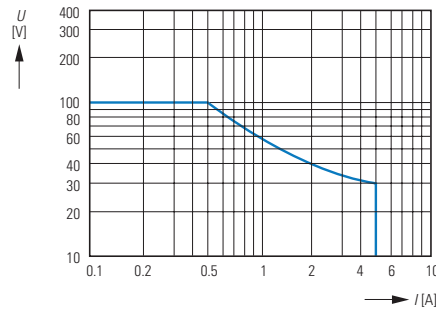
Contact life
Operations S
220 V 50 Hz AC-1
360 operations/h

Load limit curves, ETR2...-D

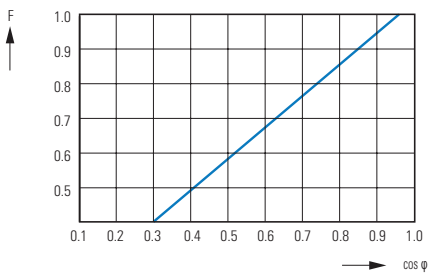
AC load (resistive)



DC load (resistive)

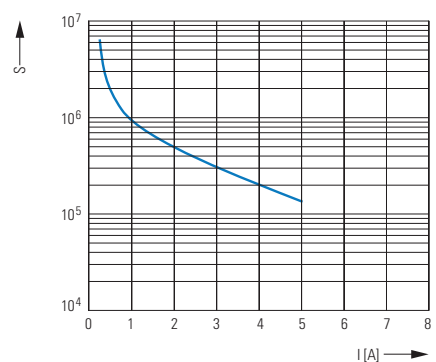


Derating factor with inductive AC load



Derating factor F with inductive load

Contact life

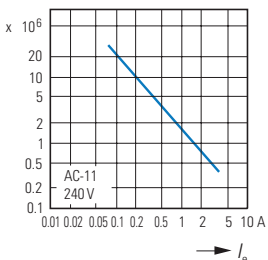


Contact life
Operations S
220 V 50 Hz AC-1
360 operations/h

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. $\varphi = 0.3$ 440 V		A	48	48	48	48
AC-15 p.f. $\varphi = 0.3$ 220 V		A	50	50	50	50
DC-11 L/R ≤ 40 ms		x I _e	1.1	1.1	1.1	1.1
Breaking capacity						
AC-14 p.f. $\varphi = 0.3$ 440 V		A	3	3	3	3
AC-15 p.f. $\varphi = 0.3$ 220 V		A	3	3	3	3
DC-11 L/R ≤ 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

Notes ¹⁾ Making and breaking conditions to DC13, time constant as stated

²⁾ 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)					
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			
	Max. 4 mA		
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

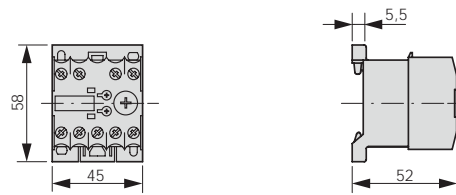
ETR2

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

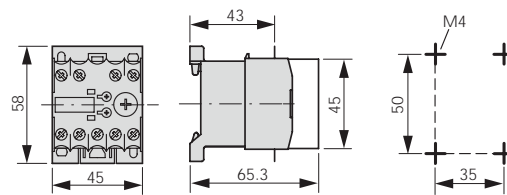
Dimensions

Electronic timing relays

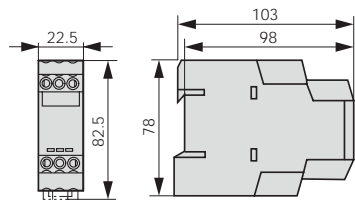
DILET...



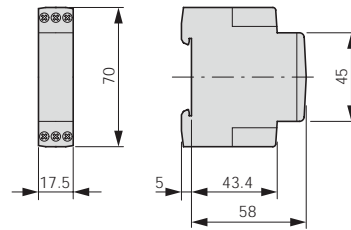
DILET...+HDILE



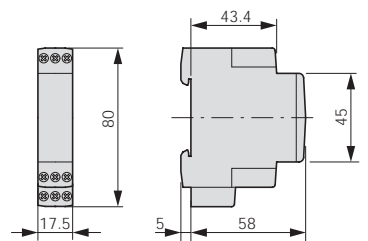
ETR4-...



ETR2-...
250 x 006

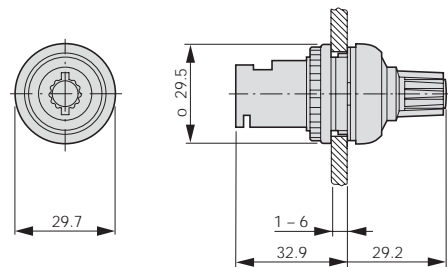


ETR2-...-D



Potentiometers

M22-R...K...



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