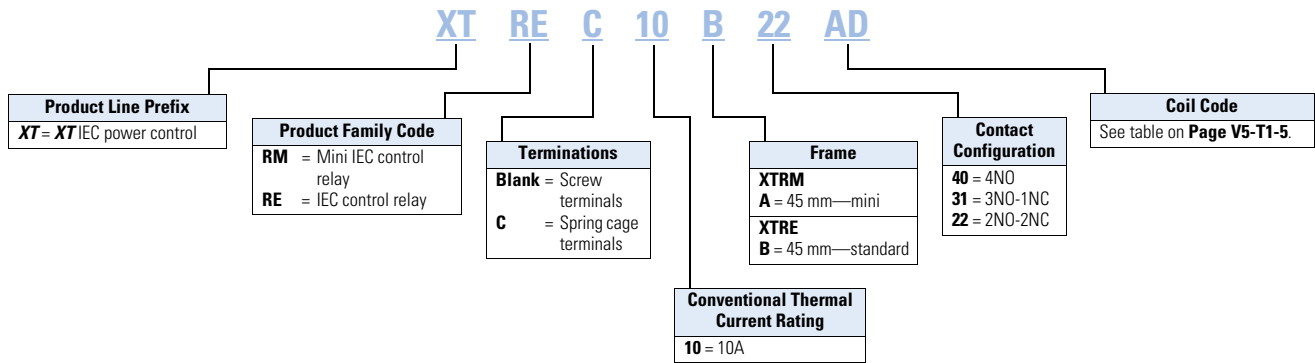


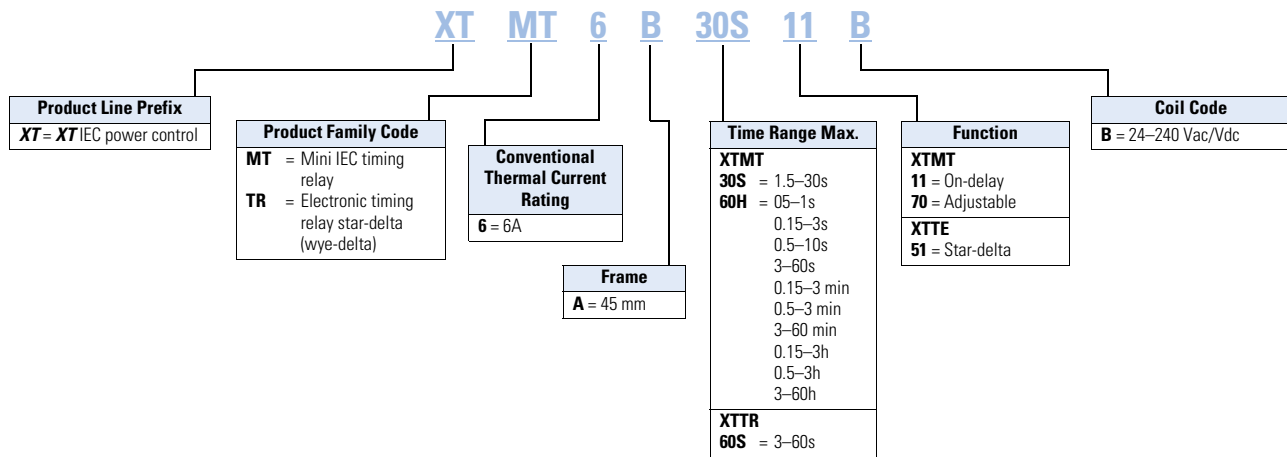
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Catalog Number Selection

XT—Relays



XT—Timers



Product Selection

When Ordering

- Orders must be placed in multiples of the package quantity listed
- DC operated control relays have a built-in suppressor circuit
- Contact terminal numbers to EN50011
- Coil terminal numbers to EN50005

XTRM10A_



Mini Control Relays

Conventional Thermal Current I_{th} (A)	Contact Configuration	Rated Operational Current AC-15 I_e (A)			Circuit Symbol	Screw Terminal Catalog Number ^①
		220–240V	380–415V	500V		
10	4NO	6	3	1.5		XTRM10A40_
10	3NO-1NC	6	3	1.5		XTRM10A31_
10	2NO-2NC	6	3	1.5		XTRM10A22_ ^②

XTREC10_



Control Relays

Conventional Thermal Current Open at 60°C I_{th} (A)	Contact Configuration	Rated Operational Current AC-15 I_e (A)			Circuit Symbol	Screw Terminal Catalog Number ^①	Spring Cage Terminal Catalog Number ^①
		220–240V	380–415V	500V			
16	4NO	6	4	1.5		XTRE10B40_	XTREC10B40_
16	3NO-1NC	6	4	1.5		XTRE10B31_	XTREC10B31_
16	2NO-2NC	6	4	1.5		XTRE10B22_ ^③	XTREC10B22_ ^③

Coil Voltage Suffix

Coil Voltage	Suffix Code	Coil Voltage	Suffix Code	Coil Voltage	Suffix Code	Coil Voltage	Suffix Code
110V 50 Hz, 120V 60 Hz	A	415V 50 Hz, 480V 60 Hz	C	380V 50 Hz, 440V 60 Hz	L	120 Vdc	AD
220V 50 Hz, 240V 60 Hz	B	550V 50 Hz, 600V 60 Hz	D	380V 60 Hz	P	220 Vdc	BD
230V 50 Hz	F	208V 60 Hz	E	12V 50/60 Hz	R	12 Vdc	RD
24V 50/60 Hz	T	190V 50 Hz, 220V 60 Hz	G	42V 50 Hz, 48V 60 Hz	W	48 Vdc	WD
24 Vdc	TD	240V 50 Hz, 277V 60 Hz	H	48V 50 Hz	Y		

Notes

- ^① Underscore (_) indicates magnet coil suffix required. See Coil Voltage Suffix table above.
- ^② DC operated control relays XTRM(C)10A22_ cannot be used with front mount auxiliary contacts.
- ^③ DC operated control relays XTRE(C)10B22_ can only be combined with two-pole auxiliary contacts.

Accessories

Auxiliary Contacts

XTMCF_









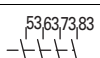
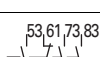
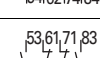
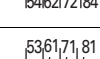
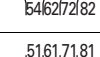
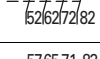
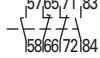
Front-Mount Auxiliary Contacts for Use with XTRM Mini Control Relays

Conventional Thermal Current, I _{th} Open (A)	Rated Operational Current AC-15 I _g (A)			Contact Configuration	Contact Sequence	Pkg. Qty. ①	Screw Terminal Catalog Number
	220V 230V 240V	380V 400V 415V	500V				
10	4	2	1.5	2NC		5	XTMCFXA02
10	4	2	1.5	1NO-1NC		5	XTMCFXA11
10	4	2	1.5	2NO		5	XTMCFXA20
10	4	2	1.5	4NC		5	XTMCFXA04
10	4	2	1.5	1NO-3NC		5	XTMCFXA13
10	4	2	1.5	2NO-2NC		5	XTMCFXA22
10	4	2	1.5	3NO-1NC		5	XTMCFXA31
10	4	2	1.5	4NO		5	XTMCFXA40
10	4	2	1.5	1NO-1NC 1NO _E -1NC _L		5	XTMCFXA122 ②

Notes

- ① Orders must be placed in multiples of package quantity listed.
- ② One early-make contact (NO_E), one late-break contact (NC_L).

Front-Mount Auxiliary Contacts for Use with XTRE Control Relays ^①

	Conventional Thermal Current, I_{th} (A), Open at 60°C	Poles	Rated Operational Current AC-15 I_o (A)			Contact Configuration	Circuit Symbol	Pkg. Qty. ^②	Screw Terminal Catalog Number
			220V 230V 240V	380V 400V 415V	500V				
Two-Pole 	16	2	6	3	1.5	2NO		5	XTCEXFAC20
	16	2	6	3	1.5	1NO-1NC		5	XTCEXFAC11 ^③
	16	2	6	3	1.5	2NC		5	XTCEXFAC02
	16	2	6	3	1.5	1NO _E -1NC _L		5	XTCEXFALC11 ^④
Four-Pole 	16	4	6	3	1.5	4NO		5	XTCEXFAC40 ^③
	16	4	6	3	1.5	3NO-1NC		5	XTCEXFAC31 ^③
	16	4	6	3	1.5	2NO-2NC		5	XTCEXFAC22 ^③
	16	4	6	3	1.5	1NO-3NC		5	XTCEXFAC13
	16	4	6	3	1.5	4NC		5	XTCEXFAC04
	16	4	6	3	1.5	1NO-1NC 1NO _E -1NC _L		5	XTCEXFALC22 ^④
	16	4	6	3	1.5	1NO-1NC 1NO _E -1NC _L		5	XTCEXFALC22 ^④

Notes

- ① Interlocked opposing contacts, to IEC/EN 60947-5-1 Annex L (positively driven), within the auxiliary contact modules (not NO_E and NC_L contacts) and between the auxiliary contacts and built-in contacts of the XTRE control relays.
- ② Orders must be placed in multiples of package quantity listed.
- ③ Catalog number is shown with screw type terminal. For spring cage, add a "C" before the last 2 digits. For example, to order a spring cage version of the XTCEXFAC22, change the catalog number to XTCEXFACC22.
- ④ One early-make contact (NO_E), one late-break contact (NC_L).

Suppressors

For AC operated contactors 50–60 Hz. On DC operated contactor relays and on XTRE10B, the suppressor circuit is built-in. Note dropout delay.

Varistor Suppressor^{①②}

XTCEXVSB_



Varistor Suppressor for XTRE

Voltage	For Use with...	Contact Sequence	Pkg. Qty. ③	Catalog Number
24–48	XTRE(C)10B		10	XTCEXVSBW
48–130			10	XTCEXVSA
130–240			10	XTCEXVSB
240–500			10	XTCEXVSB

XTCXVS_



Varistor Suppressor for XTRM

Voltage	For Use with...	Circuit Symbol	Pkg. Qty. ③	Catalog Number
24–48	XTRM6A_, XTRM9A_		10	XTCXVSW
48–130	XTRM6A_, XTRM9A_		10	XTCXVSA
110–250	XTRM6A_, XTRM9A_		10	XTCXVSB
380–415	XTRM6A_, XTRM9A_		10	XTCXVSN

XTRM Relay with Installed Suppressor



Varistor Suppressor with Integrated LED^{①②}

XTCEXVSLB_



Varistor Suppressor for XTRE

Voltage	For Use with...	Contact Sequence	Pkg. Qty. ③	Catalog Number
24–48	XTRE(C)10B		10	XTCEXVSLBW
130–240			10	XTCEXVSLBB

RC Suppressor^{①②}

XTCEXRSB_



RC Suppressor for XTRE

Voltage	For Use with...	Contact Sequence	Pkg. Qty. ③	Catalog Number
24–48	XTRE(C)10B		10	XTCEXRSBW
48–130			10	XTCEXRSBA
110–240			10	XTCEXRSBB
240–500			10	XTCEXRSBC



Notes

- ① Note dropout delay.
- ② For AC operated contactors, 50/60 Hz. DC operated contactors have an integrated suppressor.
- ③ Orders must be placed in multiples of package quantity listed.

RC Suppressor ^{①②}

XTMCXRS_

XTRM Relay with
Installed Suppressor**RC Suppressor for XTRM** ^③

Voltage	For Use with...	Circuit Symbol	Pkg. Qty. ^④	Catalog Number
24–48	XTRM6A_ XTRM9A_	A1 	10	XTMCXRSW
48–130	XTRM6A_ XTRM9A_	A2 	10	XTMCXRSA
110–250	XTRM6A_ XTRM9A_		10	XTMCXRSB

Free-Wheel Diode Suppressor

In addition to the built-in suppressor circuit for DC actuated contactors. Prevents negative breaking voltage when contactors are used in combination with a safety PLC.

XTCEXVSLBB

**Free-Wheel Diode Suppressor for XTRE**

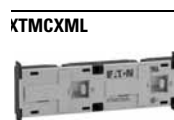
Voltage	For Use with...	Pkg. Qty. ^④	Catalog Number
130–240	XTRE10B	10	XTCEXVSLBB

Connector ^⑤**Connector**

For Use with...	Pkg. Qty. ^④	Catalog Number
XTRE(C)10B	50	XTCEXCNC
XTRM10A	50	XTMCXCNC

**Mechanical Interlock** ^⑥**Mechanical Interlock**

For Use with...	Pkg. Qty. ^④	Catalog Number
XTRE10B_	5	XTCEXMLB
XTRM10A_	5	XTMCXML

**Notes**

- ① Note dropout delay.
- ② For AC operated contactors, 50/60 Hz. DC operated contactors have an integrated suppressor.
- ③ For AC operated contactors, 50/60 Hz. Note dropout delay.
- ④ Orders must be placed in multiples of package quantity listed.
- ⑤ For mechanically arranging contactors in combinations. Distance between contactors is 0 mm.
- ⑥ For two contactors with AC or DC operated magnet system that are horizontally or vertically mounted. For Frame B, mechanical lifespan is 2.5×10^6 operations and the distance between contactors is 0 mm.

Electronic Timer Modules

Front- (top-) mounted timer modules for use with XTRE10B control relays. Can not be combined with top-mount auxiliary contacts, XTCEXF_.

XTCEXT_



Electronic Timer Modules for XTRE

Voltage	Contact Sequence	Timing Range	For Use with...	Pkg. Qty. ^①	Catalog Number
On-Delay					
24 Vac/Vdc		0.05–1s	XTRE10B_	1	XTCEXTEEC11T
100–130 Vac		0.5–10s			XTCEXTEEC11A
200–240 Vac		15–100s			XTCEXTEEC11B
Off-Delay					
24 Vac/Vdc		0.05–1s	XTRE10B_	1	XTCEXTED1C11T
100–130 Vac					XTCEXTED1C11A
200–240 Vac					XTCEXTED1C11B
24 Vac/Vdc		0.5–10s	XTRE10B_	1	XTCEXTED10C11T
100–130 Vac					XTCEXTED10C11A
200–240 Vac					XTCEXTED10C11B
24 Vac/Vdc		5–100s	XTRE10B_	1	XTCEXTED100C11T
100–130 Vac					XTCEXTED100C11A
200–240 Vac					XTCEXTED100C11B
Star-Delta					
24 Vac/Vdc		1–30s	XTRE10B_	1	XTCEXTEYC20T
100–130 Vac					XTCEXTEYC20A
200–240 Vac					XTCEXTEYC20B
Sealable Shroud					
	Transparent sealable shroud used to protect electronic timer modules from unwanted access.		XTCEXTEE, XTCEXTED, XTCEXTEY	1	XTCEXTESHRD

Note

① Orders must be placed in multiples of package quantity listed.

Mini Electronic Timers

XTMT6A

Mini Electronic On-Delay Timers



Conventional Thermal Current I_e (A)	Rated Operational Current I_o AC-11 Amps		Time Range	Function	Terminal Marking According to EN 50042	Catalog Number
	220/230/240V	380/400/440V				
6	3	3	1.5–30 sec	Fixed, on-delay		XTMT6A30S11B
6	3	6	0.05–1 sec 0.15–3 sec 0.5–10 sec 3–60 sec 0.15–3 min 0.5–10 min 3–60 min 0.15–3h 0.5–10h 3–60h	Fixed, on-delay		XTMT6A60H11B
6	3	3	0.05–1 sec 0.15–3 sec 0.5–10 sec 3–60 sec 0.15–3 min 0.5–10 min 3–60 min 0.15–3h 0.5–10h 3–60h	Adjustable: on-delay; fleeting contact on energization; flashing; pulse generating; ON-OFF		

Electronic Star-Delta (Wye-Delta) Timers

XTTR6A60S51

Electronic Star-Delta (Wye-Delta) Timers

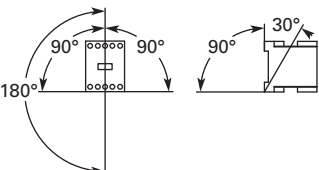


Conventional Thermal Current I_e (A)	Rated Operational Current I_o AC-11 Amps		Time Range	Function	Terminal Marking According to EN 50042	Catalog Number
	230V	400V				
6	3	3	3–60 sec	Fixed, star-delta		XTTR6A60S51B

Actuating Voltage24–240 50/60 Hz
24–240 Vdc**Admissible Cable Length**Cable unscreened, with cable cross-section 0.5–1.5 mm²
Two-core cable
Two-core cable in the same cable duct with the main cable, 50/60 Hz**Connection to**Y1/Y2, Z1/Z2
M250
M50

Technical Data and Specifications

Relays and Timers

Description	XTRE	XTCEXFAC_	XTCEXTE_	XTRM	XTMCXFA_
General					
Standards	IEC/EN 60947, VDE 0660, UL, CSA	IEC/EN 60947, VDE 0660, UL, CSA	DIN EN 61812, IEC/EN 60947, VDE 060, UL, CSA	IEC/EN 60947, VDE 0660, UL, CSA	IEC/EN 60947, VDE 0660, UL, CSA
Lifespan, mechanical—operations					
AC operated	20,000,000	10,000,000	3,000,000	10,000,000	10,000,000
DC operated	20,000,000	10,000,000	3,000,000	20,000,000	20,000,000
Maximum operating frequency (ops/hr)	9000	9000	—	9000	9000
Climatic proofing	①	①	①	①	①
Ambient temperature					
Open (°C, min./max.)	–25/60	–25/60	–40/80	–25/50	–25/50
Enclosed (°C, min./max.)	–25/40	–25/40	–25–60	–25/40	–25/40
Ambient temperature for storage (°C, min./max.)	–40/80	–40/80	–25–40	—	—
Mounting position			As required, not suspended	As required, except vertically A1/A2 at the bottom	As required, except vertically A1/A2 at the bottom
Mechanical shock resistance (IEC/EN 60068-2-27) Half-sinusoidal shock 10 ms Base unit with auxiliary contact module					
Make contact	7g	7g	6g	10g	10g
Break contact	5g	5g	6g	8g	8g
Degree of protection	IP20	IP20	IP20	IP20	IP20
Protection against direct contact from the front when actuated by a perpendicular test finger (IEC 536)	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof	Finger and back-of-hand proof
Weight					
AC operated (kg)	0.23	0.05	0.08	0.17	—
DC operated (kg)	0.28	0.05	0.08	0.20	—
Terminal capacity					
Screw terminals					
Solid (mm ²)	1 x (0.75–4) 2 x (0.75–2.5)	1 x (0.75–4) 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 (0.75–2.5)	1 x (0.75–2.5) 2 x (0.75–2.5)
Flexible with ferrule (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 (0.75–1.5) 2 x (0.75–1.5)	1 x (0.75–1.5) 2 x (0.75–1.5)	1 x (0.75–1.5) 2 x (0.75–1.5)
Solid or stranded (AWG)	18–14	—	18–14	18–14	—
Terminal screw	M3.5	M3.5	M3.5	M3.5	M3.5
Pozidriv screwdriver	Size 2	Size 2	Size 2	Size 2	Size 2
Standard screwdriver (mm)	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6	0.8 x 5.5 1 x 6
Max. tightening torque (Nm)	1.2	1.2	1.2	1.2	1.2
Spring cage terminals					
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 (0.75–2.5)	1 x (0.75–2.5) 2 x (0.75–2.5)
Flexible with or without ferrule DIN 46228 (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 (0.75–2.5)	1 x (0.75–2.5) 2 x (0.75–2.5)
Solid or stranded (AWG)	18–14	18–14	—	18–14	18–14
Standard screwdriver (mm)	0.6 x 3.5	0.6 x 3.5	—	0.6 x 3.5	0.6 x 3.5

Note

① Damp heat, constant, to IEC 60068-2-78; damp heat, cyclical, to IEC 60068-2-30.

Relays and Timers, continued

Description	XTRE	XTCEXFAC_	XTCEXTE_	XTRM	XTMCXFA_
Contacts					
Interlocked opposing contacts to ZH 1/457, including auxiliary contact module	Yes	Yes	No	Yes	Yes
Rated impulse withstand voltage (U_{imp}) Vac	6000	6000	6000	6000	6000
Overtoltage category/pollution degree	III/3	III/3	III/3	III/3	III/3
Rated insulation voltage (U_i) Vac	690	690	600	690	690
Rated operational voltage (U_o) Vac	690	500	400	600	600
Safe isolation to VDE 0106 Part 101 and Part 101/A1					
Between coil and auxiliary contacts (Vac)	400	400	250	300	300
Between the auxiliary contacts (Vac)	400	400	250	300	300
Rated operational current					
AC-15 220/240V I_b	6	6	Please inquire	6	4
380/415V I_b	4	3	Please inquire	3	2
500V I_b	1.5	—	—	1.5	1.5
DC-13 [Ⓞ]					
DC13 L/R ≤15 ms					
Contacts in series—voltage:					
1—24V	10	10	—	2.5	2.5
1—60V	6	6	—	—	—
2—60V	10	10	—	2.5	2.5
1—110V	3	3	—	—	—
3—110V	6	6	—	1.5	1.5
1—220V	1	1	—	—	—
3—220V	5	5	—	0.5	0.5
DC13 L/R ≤50 ms					
Contacts in series—voltage:					
3—24V	4	—	—	—	—
3—60V	4	—	—	—	—
3—110V	2	—	—	—	—
3—220V	1	—	—	—	—
Control circuit reliability (at $U_o = 24$ Vdc, $U_{min} = 17$, $I_{min} = 5.4$ mA)	Failure rate = $<10^{-8}$, <1 failure in 100 million operations			Failure rate = $<10^{-8}$, <1 failure in 100 million operations	
Conventional thermal current (I_{th})	16	16	6	10	10
Short-circuit rating without welding					
Maximum overcurrent protective device					
220/240V—XTPR Frame B	4	—	—	4	4
380/415V—XTPR Frame B	4	—	—	4	4
Short-circuit protection, max. fuse					
500V (A gG/gL)	10	10	6	6	6
500V (A fast)	—	—	—	10	10
Current heat losses at load of I_{th}					
AC operated (W)	0.3	0.3	—	0.2	0.2
DC operated (W)	0.3	0.3	—	0.3	0.3

Note

[Ⓞ] Making and breaking conditions to DC13, time constant as stated.

Relays and Timers, continued

Description	XTRE	XTCEXFAC_	XTCEXTE_	XTRM	XTMCXFA_
Magnet Systems					
Pickup and dropout values					
AC operated					
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz (pickup x U _c)	0.8–1.1	—	0.85–1.1	0.8–1.1	—
Dual-frequency coil 50/60 Hz (pickup x U _c)	0.8–1.1	—	—	0.85–1.1	—
DC operated ^①					
Pickup voltage (pickup x U _c)	0.8–1.1	—	0.7–1.2	0.85–1.3	—
At 24V: without auxiliary contact module (40°C) (pickup x U _c)	0.7–1.3	—	—	0.7–1.3	—
Power consumption					
Single-voltage coil 50 Hz and dual-voltage coil 50 Hz, 60 Hz					
Pickup VA	24	—	—	25	—
Pickup W	19	—	—	22	—
Sealing VA	3.4	—	2	4.6	—
Sealing W	1.2	—	1.8	1.3	—
Dual-frequency coil 50/60 Hz at 50 Hz					
Pickup VA	27	—	—	30	—
Pickup W	22	—	—	26	—
Sealing VA	4.2	—	—	5.4	—
Sealing W	1.4	—	—	1.6	—
Dual-frequency coil 50/60 Hz at 60 Hz					
Pickup VA	25	—	—	29	—
Pickup W	21	—	—	24	—
Sealing VA	3.3	—	—	3.9	—
Sealing W	1.2	—	—	1.2	—
DC operated					
Pull-in = sealing (W)	3	—	—	2.6	—
Duty factor (% DF)	100	—	100	100	—
Switching times at 100% U _c (approximate values)					
AC operated closing delay (ms)	≤21	—	—	14–21	—
AC operated NO contact opening delay (ms)	≤18	—	—	8–18	—
AC operated with auxiliary contact module, max. closing delay (ms)	—	—	—	45	45
DC operated closing delay (ms)	≤31	—	—	26–35	—
DC operated NO contact opening delay (ms)	≤12	—	—	15–25	—
DC operated with auxiliary contact module, max. closing delay (ms)	—	—	—	70	70

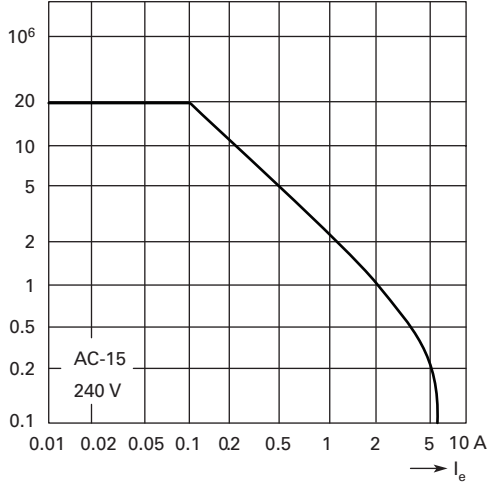
Note

^① Smoothed DC or three-phase bridge rectifier.

Control Relays—Characteristic Curves

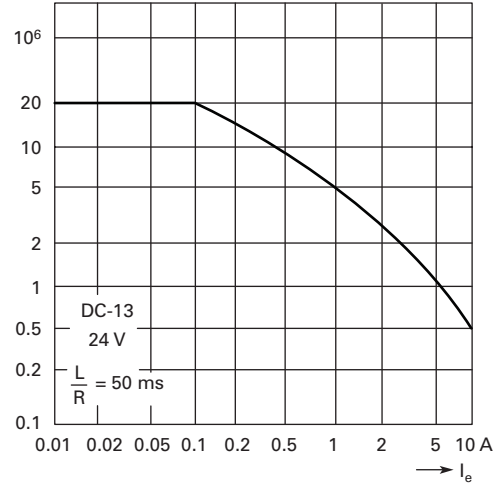
XTRE (AC-15)

Component lifespan (operations)
 I_e = Rated operational current



XTRE (DC-13) ①

Component lifespan (operations)
 I_e = Rated operational current

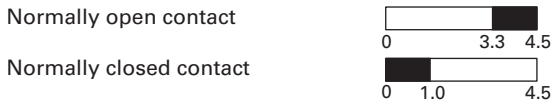


The diagrams show the closing and opening travel of the contact of the contactor relays and auxiliary contacts at no load. Tolerances are not taken into consideration.

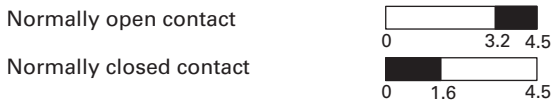
Contact Travel Diagrams

XTRE

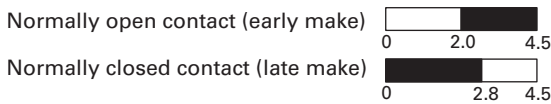
XTRE_ — AC Operation



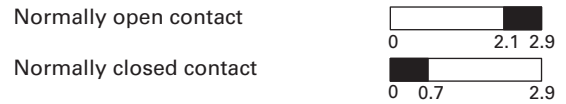
XTCEXFAC_ — AC Operation



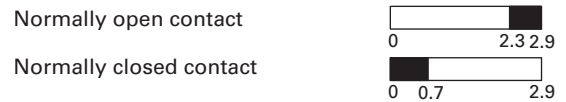
XTCEXFALC_ — AC Operation



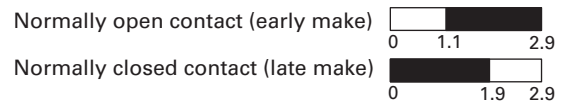
XTRE — DC Operation



XTCEXFAC_ — DC Operation



XTCEXFALC_ — DC Operation

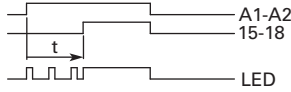


Note

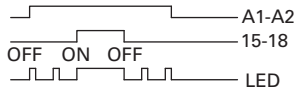
① Making and breaking conditions to DC-13, time constant as stated.

Flow Diagrams—Electronic Timers, XTMT Mini Timers

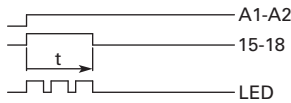
On-Delay



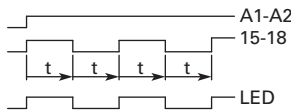
ON-OFF Function



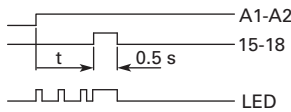
Fleeting Contact on Energization



Flashing, Pulse Initiating

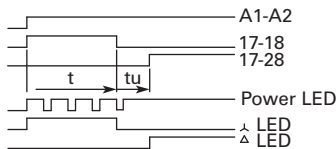


Pulse Generating



Star-Delta (Wye-Delta) Timer

Star-Delta



Rating Data

Rating Data for Approved Types

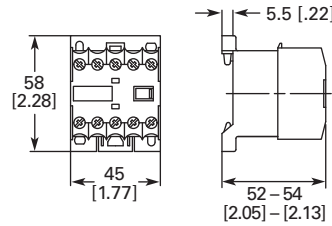
Pilot Duty	General Use
Control Relays—XTMR	
A600, P300	10A–600 Vac 0.5A–250 Vdc
Timers—XTMT, XTTR	
B300	6A–250 Vac

Dimensions

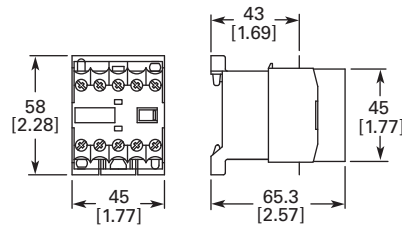
Approximate Dimensions in mm [in.]

Mini Contactor Relays

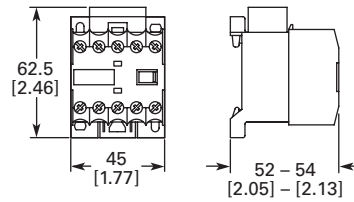
Mini Control Relay XTRM



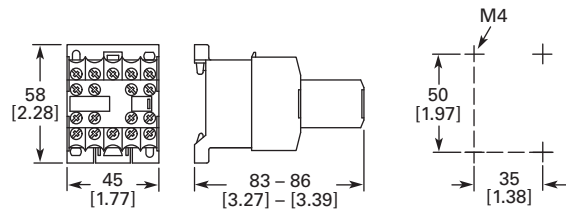
XTRM Mini Control Relay with IP40 XTMCX Shroud



XTRM Mini Control Relay with RC or Varistor Suppressor



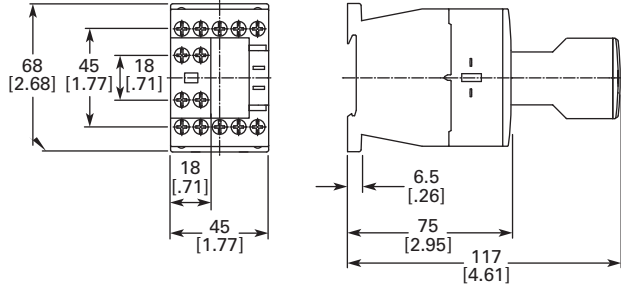
XTRM Mini Control Relay with XTMCXFA Auxiliary Contact



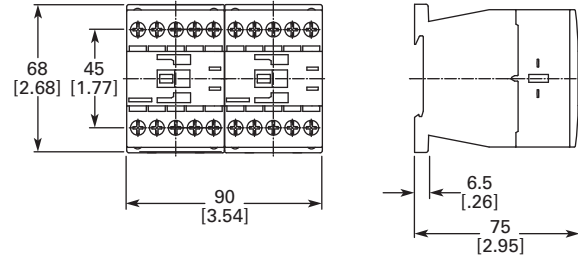
Approximate Dimensions in mm [in.]

Control Relays

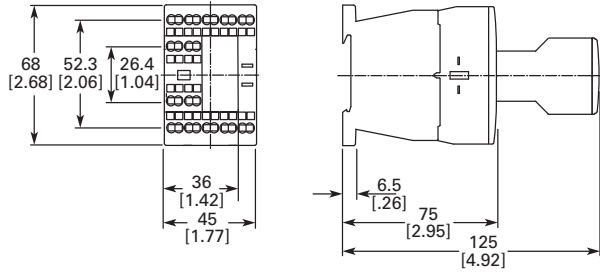
Control Relay XTRE with XTCEXFA Auxiliary Contact



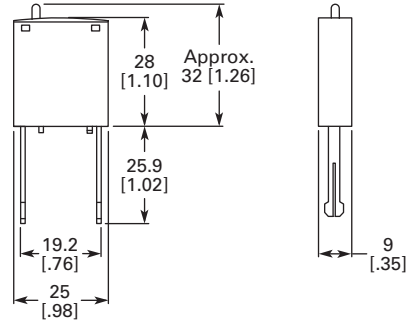
Control Relay XTRE with XTCEXMLB Mechanical Interlock



Control Relay with Spring Cage Terminals XTREC with XTCEXFA Auxiliary Contact



Coil Suppressors for Use with XTRE Control Relays



Electronic Timer Module XTCEXTE

