

Time Relays

MCB - SER - ERT - SSR - DG Series



SER-Y/U



DG-60



MCB-20



MCB-9



ERTC-01



PRODUCT SELECTION TABLE		(Er)	(Em)	(R)	(Es)	(Ts)	(Ta)	(Ef)	Control Input	ON Flasher	OFF Flasher	Down-timer	Star-Delta	Left-Right	No Voltage, Delayed Impulse	24 VAC / DC	230 VAC	12~240 VAC / DC	24~240 VAC / DC	Pcs / Carton
Product Table	Time	ON Delay	OFF Delay	OFF Delay with Control Input	ON Delay with Control Input	Single shot leading edge with control input	Single shot trailing edge with control input	Symmetric Flasher (Ef)												
ERTC-01	Multi-function T. Relay	1s - 100 h	●	●					●	●		●					●			16
SM-9	Time Relays	0,1s - 30 h	●	●						●	●						●	●		29
MCB-7	Time Relays	0,1s - 30 h	●	●													●	●		10
MCB-8	Time Relays	0,1s - 999h	●	●													●	●		10
MCB-9	Time Relays	0,5s - 30 h	●	●						●	●						●	●		10
MCB-15	Multi-function T. Relay	0,05s - 100 h	●	●	●			●	●										●	10
MCB-20	Multi-function T. Relay	0,05s - 100 h	●	●	●	●	●	●	●									●		10
MCB-30	Time Relays	2-30s	●														●	●		10
MCB-60	Time Relays	4-60s	●														●	●		10
SER-YU	Star-Delta Relays	(λ/U) 20-500ms (λ) 1-60s											●				●	●		10
SSR-2X	Left-Right Relays	1s - 60 h												●				●		24
DG-10	Time Relays	0,6s - 10m													●			●		10
DG-60	Time Relays	1s - 60m													●			●		10

SPECIFICATIONS

	MCB-7	MCB-8	MCB-9	MCB-15	MCB-20	MCB-30	MCB-60	SSR-2X	ERTC-01	SER-Y/U	DG-10	DG-60		
ENCLOSURE														
Dimensions	PK22		PK27		PK22		PK15	PK20	PK25	PK25				
Protection Class	IP20		IP40		IP20		IP40-IP20	IP20						
Weight	0,1kg;10 pcs /carton						0,1kg; 24pcs	0,25kg; 16pcs	0,1kg; 24pcs	0,3kg; 10pcs				
SUPPLY														
Operating Voltage	230V AC& 24V AC/DC		24-240 VAC/DC		12-240 VAC/DC		230VAC& 24VAC/DC		230 VAC	230VAC 110VAC	230VAC& 24VAC/DC		230 V AC	
Operating Range	for Un±%20(AC); for Un±%10(DC)													
Power Consumption	< 8 VA		< 4 VA		< 8 VA		< 3 VA	< 8 VA	< 3 VA					
OUTPUT														
Repetition Error	±%0.1		±5msec		< 150 msec		100 msec	80 msec	120 msec	-				
Reset Time	< 150 msec		=100 msec		< 150 msec		100 msec	80 msec	120 msec	-				
Output Contact	1 CO; 8 A, 2000 VA, cosφ=1						2 CO; 8A, 2000VA, cosφ=1		1 CO; 8A, 2000VA, cosφ=1		2 NO; 5A,1250VA		1 CO; 16A,4000VA	
AMBIENT CONDITIONS														
Ambient Temperature ; Humidity	-5 / +50°C ;85 %													
CONNECTIONS														
Mounting	Rail Mounted,terminal with screw													
Connection Types	Single phase 2 wires													

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Functions of MCB-15 and MCB-20 (12~ 240V AC/DC)

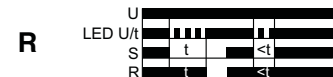
ON Delay (Er) [MCB-15 & MCB-20] :

When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay R switches into on-position (yellow LED illuminated). This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the expiry of the interval t, the interval already expired is erased and restarted when the supply voltage is next applied.



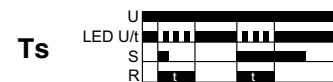
OFF Delay with control input (R) [MCB-15 & MCB-20] :

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval t begins (green LED flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). If the control contact is closed again before the interval t has expired, the interval already expired is erased and restarted at the next opening of control contact S.



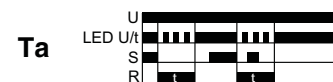
Single shot leading edge with control input (Ts) [MCB-20] :

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (green LED U/t illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.



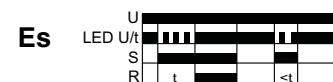
Single shot trailing edge with control input (Ta) [MCB-20] :

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). Closing the control contact S has no influence on the condition of the output R. When the control contact is opened, the output relay switches into on-position (yellow LED illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.



ON Delay with control input (Es) [MCB-20] :

The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay R switches into on-position (yellow LED illuminated). This status remains until the control contact is opened again. If the control contact is opened before the interval t has expired, the interval already expired is erased and restarted with the next cycle.



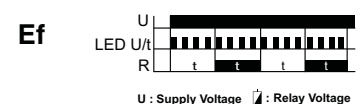
Single shot leading edge voltage controlled (Em) [MCB-15 & MCB-20] :

When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the interval t has expired, the output relay switches into off-position immediately. The interval already expired is erased and restarted when the supply voltage is next applied.



Flasher (Ef) [MCB-15 & MCB-20] :

When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval t has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.



Common Functions of SM-9; MCB-7/8/9; ERTC-01

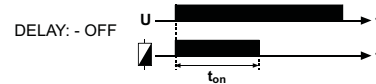
On Delay (Er)

In the On Delay mode, after the device is energized, the timer starts to count up and when it reaches the adjusted time, the relay is energized.



Off Delay (Em-1)

In the Off Delay mode, after the device is energized and with start input, the relay is energized and becomes de-energized at the end of the time adjusted by the user.

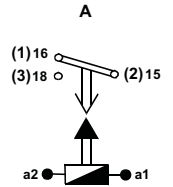
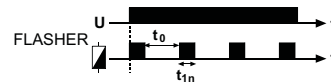


Down Timer

In the Down Timer mode, after the device is energized, the down counter starts to count down from the time adjusted by the user and when it reaches zero, the relay is energized.

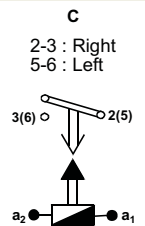
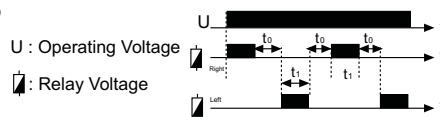
Flasher

In the Flasher mode, after the device is energized, when tOFF time ends the relay is energized and becomes de-energized at the end of the delay. The starting mode of the flasher mode can be chosen as ON or OFF mode. In the OFF mode flasher starts with tOFF and energized after the tOFF value, then continues to tOn mode. In the On mode flasher starts with tOn and deenergized after the tOn value, then continues to tOFF mode. The Flasher function is continuously repetitive.



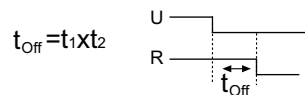
Functions of SSR-2x

When the line voltage is applied, the right output relay starts to work as "switching ON" and the left output relay as "switching OFF". At the end of "t₁" time both of two output relays switch OFF and this condition is kept for "t₀" times. At the end of this period, the left output relay "switches OFF" and the right output relay "switches ON", and this situation is also kept during "t₁" time.

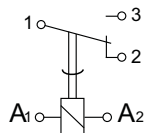


Functions of DG-06 / DG-10 / DG-60

When the supply voltage is off, relay stays energized during adjusted t_{off} time. At the end of that time, output relay turns OFF. If the supply is applied before toff time isn't up, output relay continues to stay energized.

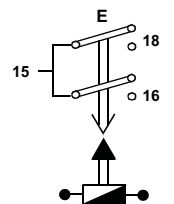
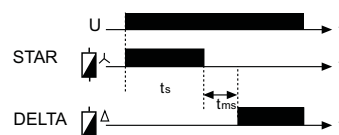


(No Voltage, Delayed Impulser)

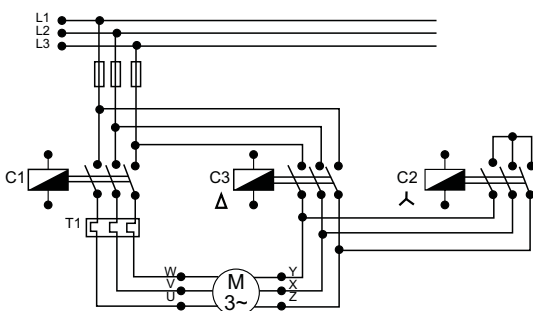


Functions of SER-Y/U

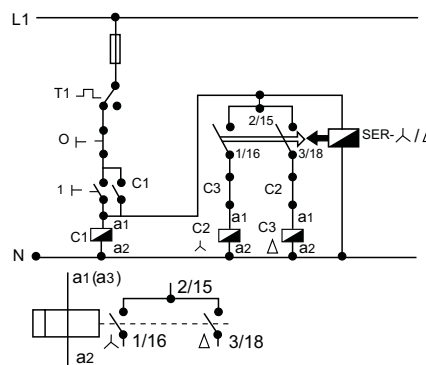
When the operating voltage is applied, the star contacts [(1/16, 2/15) for PK21/PK15, for PK25], are closed and then released after the operating time, t_s. The delta contacts [(2/15, 3/18) for PK21/PK15] are closed after the transition time, t₀ = 50 msec (fixed at factory). The fault of the transition time is ± 5 msec. This transition time can be adjusted (to= 20-500 msec.) in PK25 type.



Main Connection



Circuit Plan

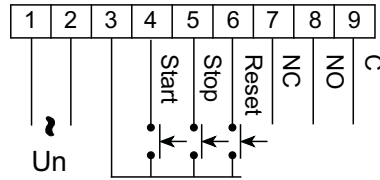
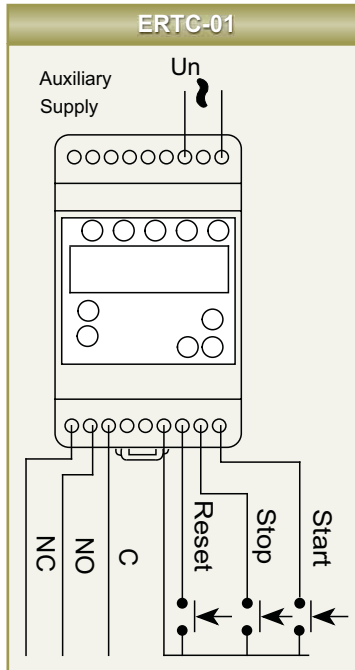


Note: 24 VAC/DC supply of SER - Y/U is applied between A2-A3

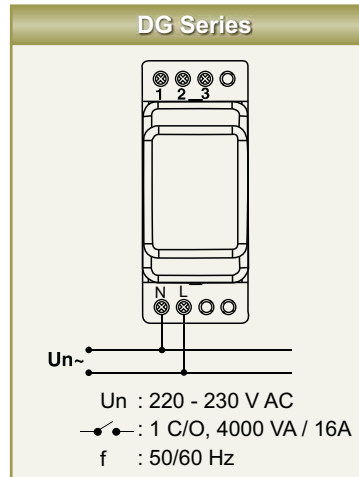
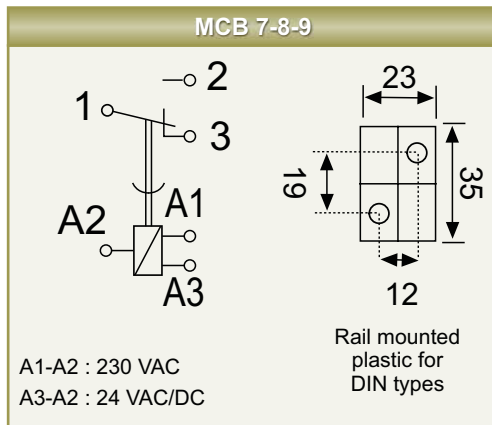
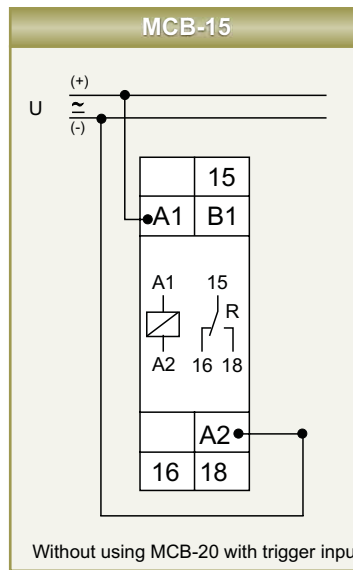
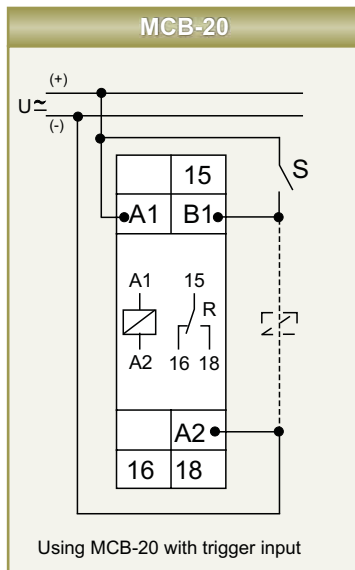
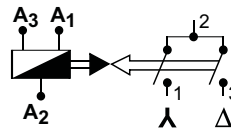
Time Relays

MCB - SER - ERT - SSR - DG Series

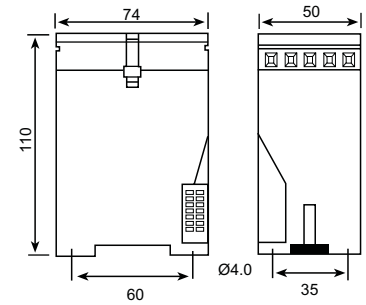
Connection Diagram



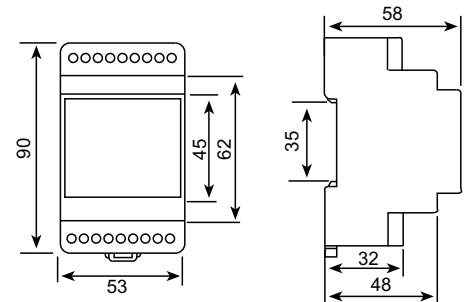
SER Y/U



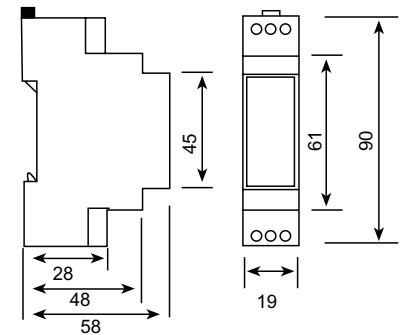
Dimensions



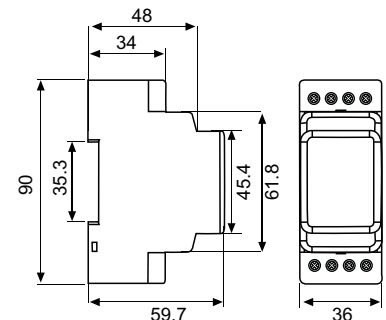
TYPE PK 10



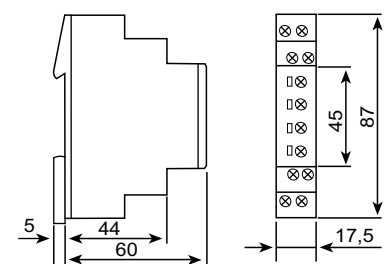
TYPE PK 20



TYPE PK 22



TYPE PK 28



TYPE PK 27

Connection diagrams are given for reference. Please always check the latest user manual given with product or download from www.entec.com.tr

