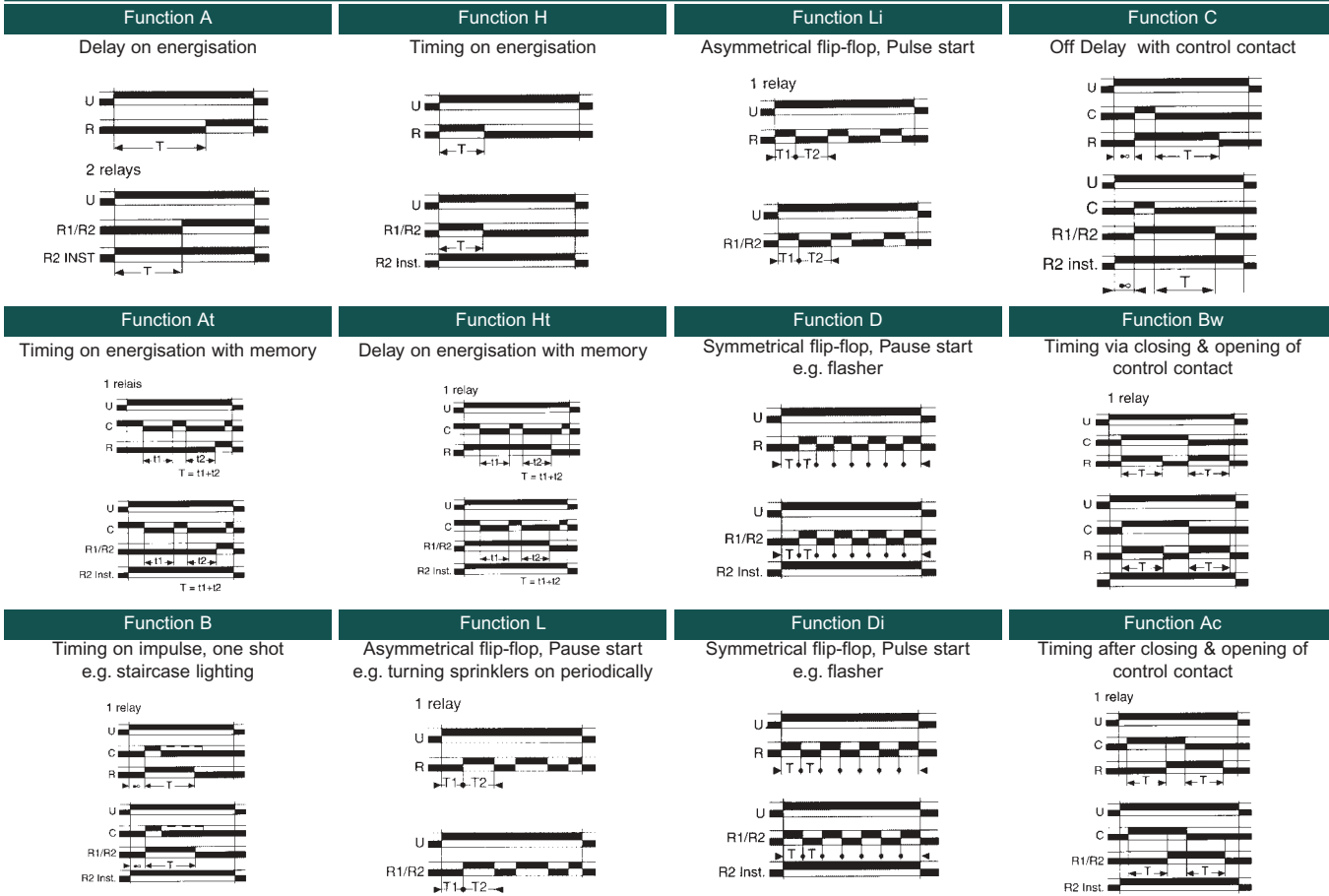
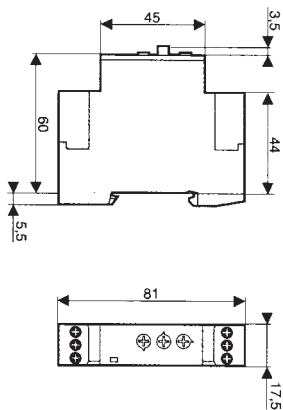


Function Diagrams for Double Pole Timers



Note: The above timing charts show outputs for single & double pole models, ignore R2 for single pole models. Pin-outs may vary dependant on the style of timer

'Chronos' Timers, 17.5mm Solid State Output



DIN rail mounted 17.5mm multi-function electronic timer with solid state relay output. Multi-range timing from 0.1 sec - 100 hours. Timer controlled by volt-free contact or output from a 3-wire PNP transistor.

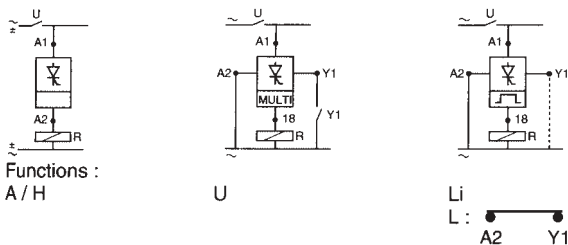
Supply voltage 24-240VAC
 Operating range 85 to 110% of nominal voltage
 Output current max. 0.7A VAC/VDC
 Max. inrush current 20A ≤ 10ms
 Min. current 10mA
 Off-state leakage < 5mA
 Timing ranges 0.1-1s, 1-10s, 6-60s, 1-10min, 6-60min

Repetition accuracy ± 0.5% of set time
 Electrical life 10⁸
 Dielectric strength 2.5kVAC
 Display LED Flashing green/on, green/operated
 Temperature -20°C to +60°C
 Approvals UL, CSA

Note: The control line voltage must be the same as the supply voltage via a volt-free relay or switch contact. For operation on DC supplies, the control input can accept an output from a PNP transistor, providing that the residual voltage is below 0.4 volts.

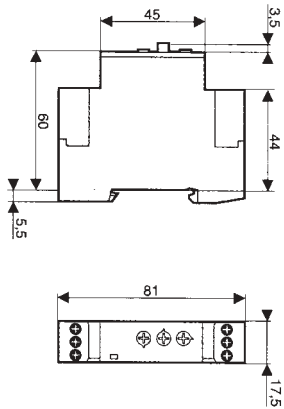
Connections

Functions: A, At, B, C, H, Ht, Di, D, Ac, Bw



Stock No.	Manf Ref ¹	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
3261998	88 826 004	MUS2	24-240VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	24.49	23.02	21.80

'Chronos' Timers, 17.5mm SPCO Relay

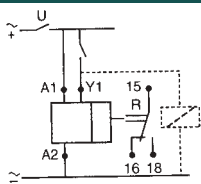


DIN rail mounted 17.5mm mono & multi-function electronic timers with 1 SPCO relay output. Multi-voltage options. Multi-range timing from 0.1 sec - 100 hours. Timer controlled by volt-free contact or output from a 3-wire PNP transistor.

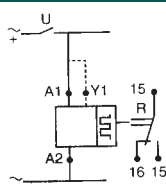
- Supply voltage: See price box for options
- Operating range: 85 to 110% of nominal voltage
- Contact rating: 8A at 250V AC/DC
- Relay output: 1 single pole changeover
- Timing ranges: 0.1-1s, 1-10s, 6-60s, 1-10min, 6-60min, 1-10h, 10-100h
- Repetition accuracy: ± 0.5% of set time
- Electrical life: 10⁵
- Dielectric strength: 2.5kVAC
- Display LED: Flashing green/on, green/operated
- Temperature: -20°C to + 60°C
- Approvals: UL, CSA

Note: The control line voltage must be the same as the supply voltage via a volt-free relay or switch contact. For operation on DC supplies, the control input can accept an output from a PNP transistor, providing that the residual voltage is below 0.4 volts.

Connections



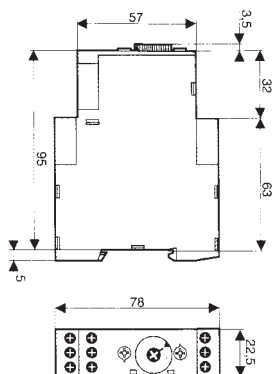
Functions: A, At, H, Ht, B, C, Di, D, Ac, Bw



Functions: Li, L

Stock No.	Manf Ref'	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
3262016	88 826 105	MUR1	24VDC, 24-240VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	21.52	20.23	19.15
3262019	88 826 115	MAR1	24VDC, 24-240VAC	A - At	17.63	16.57	15.69
3262022	88 826 125	MBR1	24VDC, 24-240VAC	B	18.99	17.85	16.90
3262025	88 826 135	MCR1	24VDC, 24-240VAC	C	18.99	17.85	16.90
3262028	88 826 145	MHR1	24VDC, 24-240VAC	H - Ht	18.99	17.85	16.90
3262031	88 826 155	MLR1	24VDC, 24-240VAC	Li - L	31.98	30.06	28.46
3262010	88 826 100	MUR4	12VDC, 12VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	24.99	23.49	22.24
3262013	88 826 103	MUR3	12-240VAC/VDC	A - At - B - C - H - Ht - Di - D - Ac - Bw	29.99	28.19	26.69

'Chronos' Timers, 22.5mm SPCO Relay



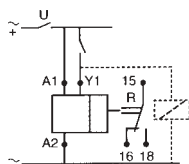
DIN rail mounted 22.5mm mono & multi-function electronic timers with 1 SPCO relay output and 2 N/O contacts for star/delta timer. Multi-voltage options. Multi-range timing from 0.1 sec - 100 hours. Timer controlled by volt-free contact or output from a 3-wire PNP transistor.

- Supply voltage: See price box for options
- Operating range: 85 to 110% of nominal voltage
- Contact rating: 8A at 250V AC/DC
- Relay output: 1 SPCO, 2 N/O (star/delta)
- Timing ranges: 0.1-1s, 1-10s, 6-60s, 1-10min, 6-60min, 1-10h, 10-100h
- Timing ranges **TQR1**: 20/40/60/80/100/120/140ms (selectable)
- Repetition accuracy: ± 0.5% of set time
- Electrical life: 10⁵
- Dielectric strength: 2.5kVAC
- Display LED: Flashing green/on, yellow/timing green/operated
- Temperature: -20°C to + 60°C
- Approvals: UL, CSA

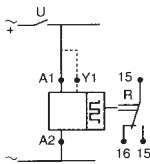
Note: The control line voltage must be the same as the supply voltage via a volt-free relay or switch contact. For operation on DC supplies, the control input can accept an output from a PNP transistor, providing that the residual voltage is below 0.4 volts.

Connections

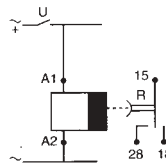
Functions: A, At, H, Ht, B, CDi, D, Ac, Bw



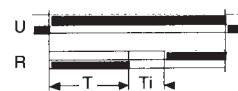
Functions: Li, L



Functions: Q

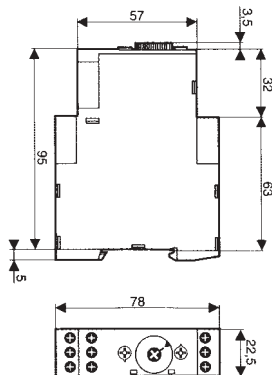


Star-delta



Stock No.	Manf Ref'	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
3262094	88 865 105	TUR1	24VDC, 24-240VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	33.95	31.91	30.22
3262109	88 865 155	TLR1	24VDC, 24-240VAC	Li - L	39.95	37.55	35.56
3262112	88 865 175	TQR1	24VDC, 24-240VAC	Q (STAR DELTA)	26.99	25.37	24.02
3262091	88 865 103	TUR3	12-240VAC/VDC	A - At - B - C - H - Ht - Di - D - Ac - Bw	36.49	34.30	32.48

'Chronos' Timers, 22.5mm DPCO Relay



DIN rail mounted 22.5mm mono & multi-function electronic timers with DPCO relay output. Multi-range timing from 0.1 sec - 100 hours. Timer controlled by volt-free contact or output from a 3-wire PNP transistor. The TU2R1 has 2 timing relays which time simultaneously, with the option, selectable by dip switch for one of the relays to switch instantaneously upon power up. The TK2R1 offers 2 timers with true off delay of up to 160 secs, please consult sales for times greater than this.

Supply voltage See price box for options
 Operating range 85 to 110% of nominal voltage
 Contact rating 8A at 250V AC/DC
 Relay output Double pole changeover
 Timing ranges 0.1-1s, 1-10s, 6-60s, 1-10min, 6-60min
 1-10h, 10-100h
Timing ranges TK2R1 0.6s, 2.5s, 20s, 160s (selectable)
 Repetition accuracy ± 0.5% of set time
 Electrical life 10⁵
 Dielectric strength 2.5kVAC
 Display LED Flashing green/on, yellow/timing green/operated
 Temperature -20°C to + 60°C
 Approvals UL, CSA

Note: The control line voltage must be the same as the supply voltage via a volt-free relay or switch contact. For operation on DC supplies, the control input can accept an output from a PNP transistor, providing that the residual voltage is below 0.4 volts.

5 >

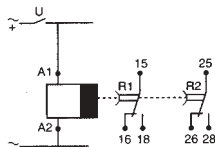
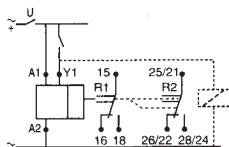
Connections

Functions: A, At, B, C, H, HtDi, D, Ac, Bw

Functions: K

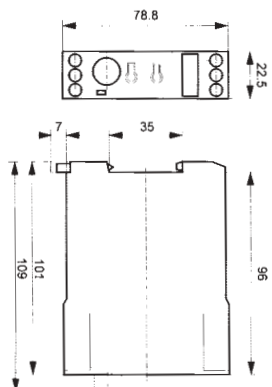
Function K (TK2R1)

Delay on de-energisation



Stock No.	Manf Ref'	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
3262130	88 865 305	TU2R1	24VDC, 24-240VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	37.49	35.24	33.37
3262124	88 865 265	TK2R1	24VDC, 24-240VAC	K (TRUE OFF DELAY WITHOUT CONTROL CONTACT)	37.99	35.71	33.81

Multi-Function, Multi-Range SPCO Timer, 22.5mm



DIN rail mounted 22.5mm multi-function, multi-range electronic timer with SPCO relay output, Watchdog timer in 22.5mm case and a star delta timer in a 17.5mm case. 10 timing ranges from 1 sec - 60 hours and 8 functions + on/off, all selectable from front with screwdriver. LED indication of output status with four different modes of flashing.

Supply voltage 24 to 48VDC, 24 to 240VAC, 50/60Hz
 Operating range 80 to 120% (DC), 85 to 110% (AC)
 Contact rating 8A at 440VAC
 Relay output Single pole changeover
 10 Timing ranges 0.05-1s, 0.15-3s, 0.5-10s, 0.05-1min
 0.15-3min, 0.5-10min, 0.05-1h
 0.15-3h, 0.5-10h, 3-60h
 Repetition accuracy ± 0.2% of set time
 Reset time 50ms
 Power consumption 1.5W (DC), 1.5VA (AC)
 Dielectric strength 2kVAC
 Temperature -20°C to + 60°C
 Approvals UL, C-UL, GL

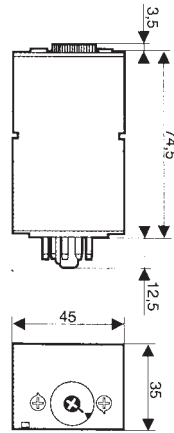
Display LED
 Off Output in rest position, no timing
 Rapid flashing Output in rest position, time running
 Continuous Output in operating position, no timing
 Slow flashing Output in operating position, time running.

Functions

- A Delay on energisation
- Ac Timing after closing and opening of control contact
- B Timing on impulse, one shot
- C Timing after impulse
- H Timing on energisation
- Di Flip-flop, flasher relay starting with pulse
- W Timing after pulse of control contact
- P Timing on energisation, at end of timing period relay changes state for 500ms
- N Watchdog, fleeting on delay timer with pulse control
- Q Star delta

Stock No.	Manf Ref'	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
2193418	KOP160J7MWVFN00	MULTI-FUNCTION	24-48VDC, 24-240VAC	A - Ac - B - C - H - Di - W - P - ON/OFF	32.11	30.83	29.54
2193421	KOP128J7CAVFN00	WATCHDOG	24-48VDC, 24-240VAC	N	27.24	26.15	25.06
2193424	KOL251H7MKVFN00	STAR-DELTA	24-48VDC, 24-240VAC	Q	32.21	30.92	29.63

Chronos Timers
8Pin Plug-in, SPCO Relay



8 pin plug-in bi-function & multi-function electronic timers with SPCO relay output. Multi-range timing from 0.1 sec - 100 hours. Timer controlled by volt-free contact or output from a 3-wire PNP transistor. 8 pin connector bases which can be DIN rail or panel mounted, are also available.

Supply voltage See price box for options
 Operating range 85 to 110% of nominal voltage
 Contact rating 8A at 250V AC/DC
 Relay output Single pole changeover
 Timing ranges 0.1-1s, 1-10s, 6-60s, 1-10min, 6-60min
 1-10h, 10-100h

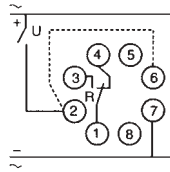
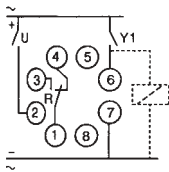
Repetition accuracy ± 0.5% of set time
 Electrical life 10⁵
 Dielectric strength 2.5kVAC
 Display LED Flashing green/on, green/operated
 Temperature -20°C to + 60°C
 Approvals UL, CSA

Note: The control line voltage must be the same as the supply voltage via a volt-free relay or switch contact. For operation on DC supplies, the control input can accept an output from a PNP transistor, providing that the residual voltage is below 0.4 volts.

Connections

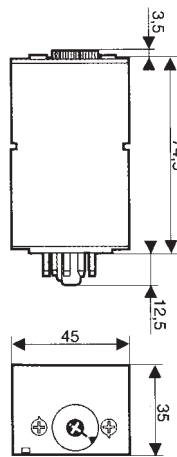
Functions: A, At, B, C, H, Ht, Di, D, Ac, Bw

Functions: Li, L



Stock No.	Manf Ref'	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
3262142	88 867 105	OUR1	24VDC, 24-240VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	34.99	32.89	31.14
3262148	88 867 155	OLR1	24VDC, 24-240VAC	Li - L	39.99	37.59	35.59
3262139	88 867 103	OUR3	12-240VAC/VDC	A - At - B - C - H - Ht - Di - D - Ac - Bw	39.99	37.59	35.59

Chronos Timers
11Pin Plug-in, DPCO Relay



11 pin plug-in bi-function & multi-function electronic timers with relay output from two changeover relays. Multi-range timing from 0.1 sec - 100 hours. Timer controlled by volt-free contact or output from a 3-wire PNP transistor. The PU2R1 & the PU2R3 have 2 timing relays which time simultaneously, with the option, selectable by dip switch for one of the relays to switch instantaneously upon power up. 11 pin connector bases which can be DIN rail or panel mounted, are also available.

Supply voltage See price box for options
 Operating range 85 to 110% of nominal voltage
 Contact rating 8A at 250V AC/DC
 Relay output Double pole changeover
 Timing ranges 0.1-1s, 1-10s, 6-60s, 1-10min, 6-60min
 1-10h, 10-100h

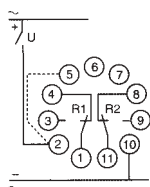
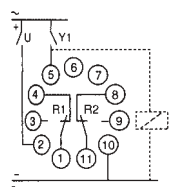
Repetition accuracy ± 0.5% of set time
 Electrical life 10⁵
 Dielectric strength 2.5kVAC
 Display LED Flashing green/on, green/operated
 Temperature -20°C to + 60°C
 Approvals UL, CSA

Note: The control line voltage must be the same as the supply voltage via a volt-free relay or switch contact. For operation on DC supplies, the control input can accept an output from a PNP transistor, providing that the residual voltage is below 0.4 volts.

Connections

Functions: A, At, B, C, H, Ht, Di, D, Ac, Bw

Functions: Li, L



Stock No.	Manf Ref'	Type	Voltage	Functions	Unit Price		
					1-4	5-9	10-24
3262166	88 867 305	PU2R1	24VDC, 24-240VAC	A - At - B - C - H - Ht - Di - D - Ac - Bw	44.99	42.29	40.04
3262181	88 867 455	PL2R1	24VDC, 24-240VAC	Li - L	44.99	42.29	40.04
3262163	88 867 303	PU2R3	12-240VAC/VDC	A - At - B - C - H - Ht - Di - D - Ac - Bw	49.99	46.99	44.49