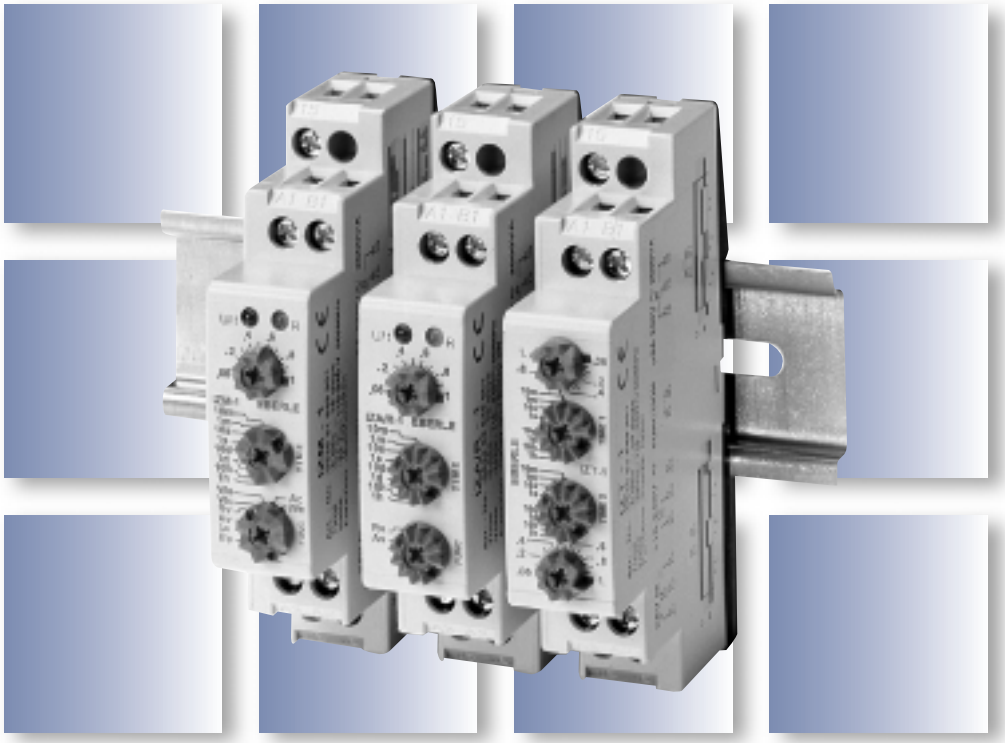
EBERLE

Time Relays for Installation in Distribution Boxes
IZ Series



Main features at a glance:

- Minimum stockkeeping requirements. Thanks to a well-balanced unit concept we are able to cover the wide range of application of time relays with 3 basic types.
- Time range: 0.05 sec. to 10 days
- Multivoltage: 24 V AC/DC, 110 to 240 V AC
- Suitable for mounting in distribution switch boards on 35 mm DIN rail
- Overall width: 17.5 mm
- **IZM - 1** multifunction relay with 8 functions
- **IZA/R - 1** On-delay and off-delay (selectable)
- **IZT - 1** Flasher, pulse and pause time can be set separately

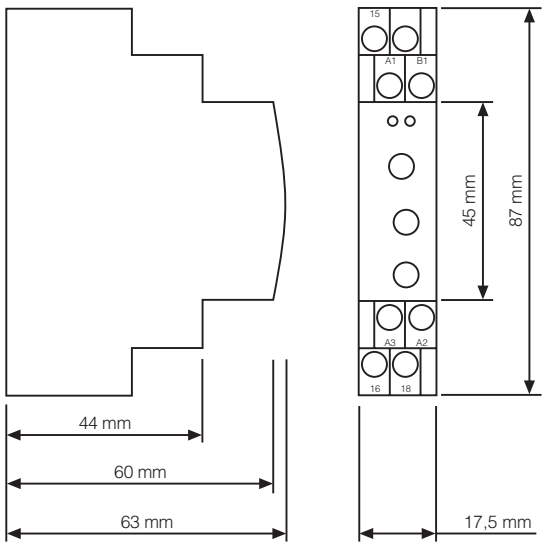
Particularly suitable for building installation applications:
- **IZML - 1** multifunction relay, supply voltage 12 to 60 V AC/DC

invensys

General/Technical Specification for timer IZ-Series

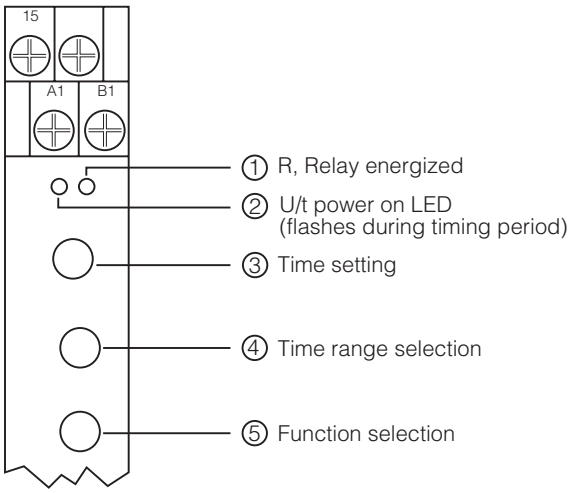
Supply voltage IZM-1, IZT-1, IZA/R-1	DC 24 V (+/– 10 %), AC 24 V, AC 110...240 V AC (–15/+10 %)
For IZML-1 only	AC/DC 12...60 V (+/– 10 %)
Ripple rate	</=20 % for DC supply voltages
Frequency	50/60 Hz
Power consumption (max.)	AC/DC 24 V 1,5 VA/1 W; AC 110 V 2 VA; AC 230 V 8 VA
Duty cycle	100 %, IEC class 1c
Contact material	AgCdO
Contact rating	AC 250 V/8 A (units mounted without spacing 5 A)
Min. switching current	100 mA
Electrical life	400.000 operations at 1000 VA resistive load
Mechanical life	30 000 000 operations
Switching frequency	3600/h at 100 VA resistive load
Insulation nominal voltage	250 Vms according to IEC 664-1
Dielectric strength/Pollution degree	4 kV/2 according to IEC 664-1
Air and creepage distance	3 mm according to IEC 664-1
Operating temperature	–25 °C...+55 °C
Storage temperature	–25 °C...+70 °C
Climate resistance	HVF according to DIN 40040
Mounting	DIN-rail 35 mm
Protection class	housing IP 40, terminals IP 20
Wire cross section	up to 4mm^2
Housing material	self extinguishing plastic
Tamperproof protection class of terminals	according to VDE 0106
Display	1 LED (green) "U/t" for power on, flashing during timing period 1 LED (yellow) "R" for relay energized
Signal Input (loadable) B1 (IZM-1, IZML-1 and IZA/R-1, only)	parallel load on C, B1-A2 (AC 110...240 V) or B1/A3 (AC/DC 24 V), are allowed; (static current with open trigger contact B1 app. 2 mA)
Voltage dependance B1 Control wiring (contact C open)	voltage B1-A2 (A3) needs at least 90 % of the voltage A1-A2(A3) between terminals A1-B1: capacity <10 nF, resistance >1 MOhm
Maximum reset time by de-energizing	100 ms
Basic accuracy	+/– 0,5 % at min. and max. position
Adjusting accuracy	< 5%
Repitition accuracy (with constant parameters)	< 0,5 % (off full range) 5 ms
Number of timing ranges	8
Time range	0,05 s ...10 days

Dimensions of all types

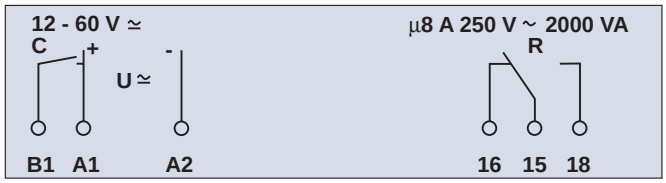


Multifunction Timer Type IZM/L-1

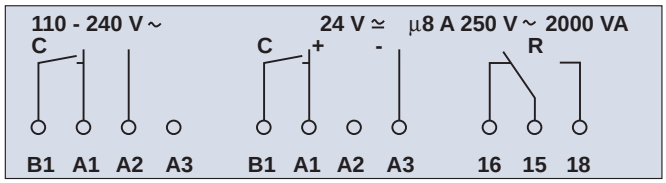
IZM/L-1 Functions



IZML-1



IZM-1



U: Supply voltage **C: Control contact**
R: Output or load relay **t: Delay time**

We: Interval timer (leading edge)

On application of supply voltage the relay will energise and the time out period will start following time out the relay will de-energise. If, following time out and de-energisation the supply voltage is maintained and the control contact (A1-B1) is closed and then re-opened the function will be repeated. (With C it works like Wa function).

Rv: off-delay

Control contact is required to perform this function (connection between terminals A1 and B1 switchable). Supply to the unit must be continuous. On closure of the control contact the relay energises, on re-opening the control contact the time out period starts to run, on completition of the time out period the relay de-energises. If the control contact is reclosed before the time out period is completed the time out period resets and starts again from zero when the control contact is again re-opened.

Av: on-delay

Following application of power to the unit the time period starts to run, on completion of the time period the relay energises and will remain energised for as long as the power is maintained to the unit. If the power is removed from the unit before time out is complete the timing function will reset to zero.
An additional feature which may be utilised as follows: If the control contact (A1-B1) is closed following energisation of the relay the relay will de-energise. If the control contact is then re-opened the timing function will start. If during time out the control contact is closed the time resets to zero and only restarts if the control contact is re-opened.

Ac: on-delay with control contact

Constant supply voltage is required to the timer. On closure of the control contact (A1-B1) the time out period will start following this time out the relay will energise. On opening the control contact the relay will de-energise. Opening of the control contact before time out is complete will reset the time out period to zero and the time will only restart on closure of the control contact.

Wa: single shot timer (trailing edge)

Control contact is required to perform this function (connection between terminals A1 and B1 switchable). Supply to the unit must be continous. The closure of the control contact has no effect; when control contact is re-opened the relay energises and time out period starts to run, after time out the relay de-energises. Following time out and de-energisation opening of the control contact will re-energise the relay and time out period starts to run.

Iw: underspeed (pulse) monitoring

Application of supply voltage relay energises, on closure of control contact (A1-B1) time out period runs, on completition of time out period the relay de-energises and stays latched until supply voltage has been disconnected and supplied again. Re-opening and closing the control contact during the time out period extends the timing period.

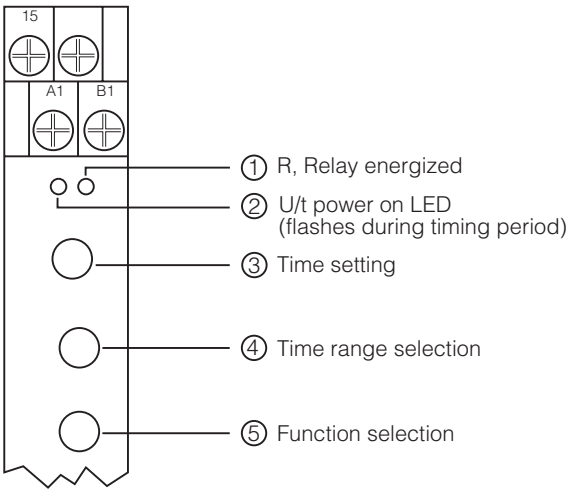
Wc: single shot timer (leading edge)

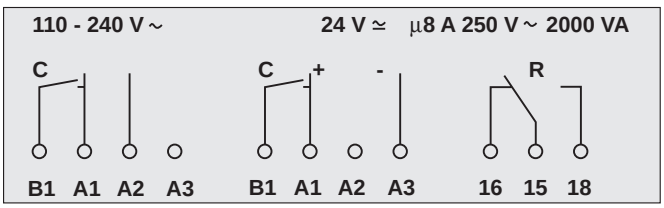
Control contact is required to perform this function (connection between terminals A1 and B1 switchable). Supply to the unit must be continous. On closure of the control contact the relay will energise and time out period starts to run, on completition of the time out period the relay will de-energise. Activation of the control contact during the time out period has no effect.

Bp: Flasher pause first

On application of supply voltage the time period will time out and then the relay will energise for the same time period and then de-energise for the same time period and then re-energise. The relay will continue to energise and re-energise in this manner (the same time period for pause and pulse) for as long as the supply voltage is applied. If the control contact is closed the present period is finished before relay stops. If the control contact is re-opened again the function starts as described.

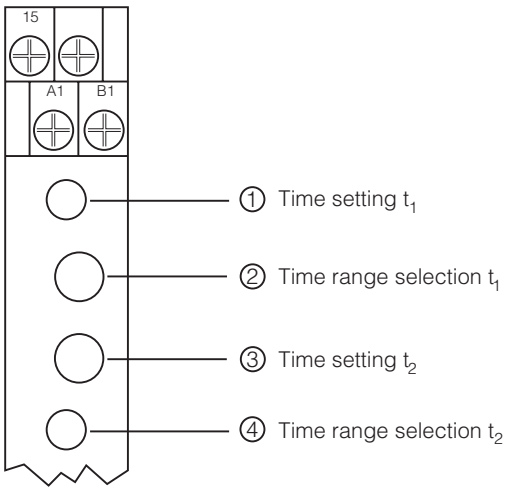
On-/Off-delay Timer Type IZA/R-1
Functions

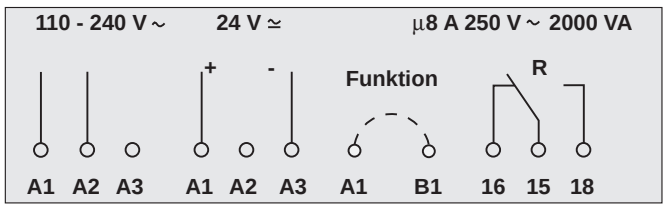




U: Supply voltage **C: Control contact**
R: Output or load relay **t: Delay time**

Asymmetric flasher Type IZT-1
Functions





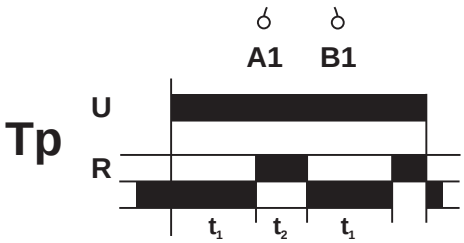
U: Supply voltage **t: Delay time**
R: Output or load relay

Av: on-delay

Following application of power to the unit the time period starts to run, on completition of the time period the relay energises and will remain energised for as long as the power is maintained to the unit. If the power is removed from the unit before time out is complete the timing function will reset to zero.
An additional feature which may be utilised as follows: If the control contact (A1-B1) is closed following energisation of the relay the relay will de-energise. If the control contact is then re-opened the timing function will start. If during time out the control contact is closed the time resets to zero and only restarts if the control contact is re-opened.

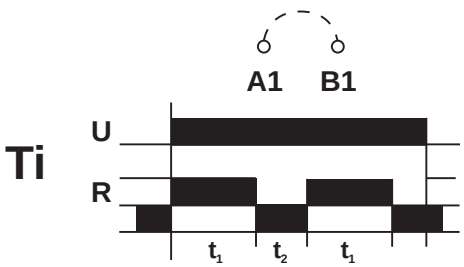
Rv: off-delay

Control contact is required to perform this function (connection between terminals A1 and B1 switchable). Supply to the unit must be continuous. On closure of the control contact the relay energises, on re-opening the control contact the time out period starts to run, on completition of the time out period the relay de-energises. If the control contact is reclosed before the time out period is completed the time out period resets and starts again from zero when the control contact is again re-opened.



Asymmetric flasher, pause first (A1/B1 not linked)

When input voltage **U** is applied, the time t_1 (=pause) begins to run and the relay **R** remains at the off position. On completion of t_1 the output relay **R** energises and remains to the on position during time t_2 (=pulse). The output relay **R** continues to operate in the set pulse-pause ratio as long as the input voltage **U** is maintained.



Asymmetric flasher, pulse first (A1/B1 linked)

When input voltage **U** is applied, the output relay **R** energises immediately and time t_1 (=pulse) begins to run. On completion of t_1 the output relay **R** de-energises and remains to the off position during time t_2 (=pause).
The output relay **R** continues to operate in the set pulse-pause ratio as long as the input voltage **U** is maintained.

U 468 931 002 672 - 3A-04.98 Errors possible

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