



Timing relay, 1W, 0.05s-100h, multi-function, 400VAC

Part no.

Catalog No.

Alternate Catalog No.

EL-Nummer (Norway)

ETR4-69-W

031887

XTTR6A100H69N

0004110008

Delivery program

|                               |  |  |                                                                                                                                                                                                                    |
|-------------------------------|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product range                 |  |  | ETR4 timing relays                                                                                                                                                                                                 |
| Basic function                |  |  | Timer relays                                                                                                                                                                                                       |
| Function                      |  |  | Multi-functional<br>On-delayed<br>Off-delayed<br>Fleeting contact on energization<br>Fleeting contact on de-energization<br>Flashing, pulse initiating<br>On- and Off-delayed<br>Pulse forming<br>Pulse generating |
|                               |  |  | Adjustable timing functions                                                                                                                                                                                        |
| Number of changeover contacts |  |  | 1                                                                                                                                                                                                                  |
| Time range                    |  |  | 0.05 s - 100 h                                                                                                                                                                                                     |
| Time range                    |  |  | 0.05 - 1 s<br>0.15 - 3 s<br>0.5 - 10 s<br>1.5 - 30 s<br>5 - 100 s<br>15 - 300 s<br>1.5 - 30 min<br>15 - 300 min<br>1.5 - 30 h<br>5 - 100 h                                                                         |

Rated operational current

|                   |                 |    |                                          |
|-------------------|-----------------|----|------------------------------------------|
| AC-14             |                 |    |                                          |
| 380 V 400 V 415 V | I <sub>e</sub>  | A  | 3                                        |
|                   |                 |    | Value applies starting with release 001. |
| AC-15             |                 |    |                                          |
| 220 V 230 V 240 V | I <sub>e</sub>  | A  | 3                                        |
| 380 V 400 V 415 V | I <sub>e</sub>  | A  | 3                                        |
|                   |                 |    | Value applies starting with release 001. |
| Voltage range     | U <sub>LN</sub> | V  | 400 V AC, 50/60 Hz                       |
| Width             |                 | mm | 22.5                                     |

Terminal marking according to EN 50042

Terminal marking according to EN 50042

Technical data

|                      |            |                   |                                                                                |
|----------------------|------------|-------------------|--------------------------------------------------------------------------------|
| General              |            |                   |                                                                                |
| Standards            |            |                   | Standard IEC/EN 61812<br>VDE 0435                                              |
| Lifespan, mechanical |            |                   |                                                                                |
| AC operated          | Operations | x 10 <sup>6</sup> | 30                                                                             |
| DC operated          | Operations | x 10 <sup>6</sup> | 30                                                                             |
| Climatic proofing    |            |                   | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |

|                                                 |                 |                                    |
|-------------------------------------------------|-----------------|------------------------------------|
| Ambient temperature                             |                 |                                    |
| Ambient temperature, storage                    | °C              | - 45 - + 85                        |
| Open                                            | °C              | -25 - +60                          |
| Enclosed                                        | °C              | - 25 - + 45                        |
| Mounting position                               |                 | As required                        |
| Mechanical shock resistance (IEC/EN 60068-2-27) |                 |                                    |
| Half-sinusoidal shock, 20 ms                    | g               |                                    |
| Make contact                                    | g               | 4                                  |
| Degree of protection                            |                 |                                    |
| Terminals                                       |                 | IP20                               |
| Weight                                          | kg              | 0.1                                |
| Terminal capacities                             | mm <sup>2</sup> |                                    |
| Solid                                           | mm <sup>2</sup> | 1 x (0.5 - 2.5)<br>2 x (0.5 - 1.5) |
| Flexible with ferrule                           | mm <sup>2</sup> | 1 x (0.5 - 2.5)<br>2 x (0.5 - 1.5) |
| Solid or stranded                               | AWG             | 1 x (20 - 14)                      |

## Contacts

|                                               |                  |                  |                                                                 |
|-----------------------------------------------|------------------|------------------|-----------------------------------------------------------------|
| Rated impulse withstand voltage               | U <sub>imp</sub> | V AC             | 6000                                                            |
|                                               |                  |                  | Value applies starting with release 001.                        |
| Overvoltage category/pollution degree         |                  |                  | III/2                                                           |
| Rated insulation voltage                      | U <sub>i</sub>   | V AC             | 600                                                             |
|                                               |                  |                  | Value applies starting with release 001.                        |
| Rated operational voltage                     | U <sub>e</sub>   | V AC             | 440                                                             |
|                                               |                  |                  | Value applies starting with release 001.                        |
| Safe isolation to EN 61140                    |                  |                  |                                                                 |
| between coil and auxiliary contacts           |                  | V AC             | 250                                                             |
| between the auxiliary contacts                |                  | V AC             | 250                                                             |
| Making capacity                               |                  |                  |                                                                 |
| AC-14 cos φ = 0.3 400 V                       |                  | A                | 48                                                              |
| AC-15 cos φ = 0.3 220 V                       |                  | A                | 50                                                              |
| DC-11 L/R - 40 ms                             |                  | x I <sub>e</sub> | 1.1                                                             |
| Breaking capacity                             |                  |                  |                                                                 |
| AC-14 cos φ = 0.3 440 V                       |                  | A                | 3                                                               |
| AC-15 cos φ = 0.3 220 V                       |                  | A                | 3                                                               |
| DC-11 L/R - 40 ms                             |                  | x I <sub>e</sub> | 1.1                                                             |
| Rated operational current                     | I <sub>e</sub>   | A                |                                                                 |
| AC-14                                         | I <sub>e</sub>   |                  |                                                                 |
| 380 V 400 V 415 V                             | I <sub>e</sub>   | A                | 3                                                               |
|                                               |                  |                  | Value applies starting with release 001.                        |
| AC--14                                        |                  |                  |                                                                 |
| 440 V                                         | I <sub>e</sub>   | A                | 3                                                               |
| AC-15                                         |                  |                  |                                                                 |
| 220 V 230 V 240 V                             | I <sub>e</sub>   | A                | 3                                                               |
| DC-11                                         |                  |                  |                                                                 |
| Note                                          |                  |                  | Making and breaking conditions to DC13, time constant as stated |
| L/R max. 15 ms                                |                  | A                |                                                                 |
| 24 V                                          | I <sub>e</sub>   | A                | 1.5                                                             |
| L/R max. 50 ms                                |                  | A                | 1.2                                                             |
| Conv. thermal current                         | I <sub>th</sub>  | A                | 6                                                               |
| Short-circuit rating without welding          |                  |                  |                                                                 |
| Note                                          |                  |                  | When supplied directly from mains or transformer > 1000 VA      |
| Max. fuse, make contacts                      |                  | A gG/gL          | 6                                                               |
| Max. fuse, break contacts                     |                  | A gG/gL          | 6                                                               |
| Max. overcurrent protective device, 220/230 V |                  | Type             | FAZ-B4/1-HI                                                     |

## Magnet systems

|                                       |                |       |       |
|---------------------------------------|----------------|-------|-------|
| Rated operational voltage             | U <sub>e</sub> | V     |       |
| AC                                    |                |       | 400   |
| Power consumption                     |                |       |       |
| Pick-up AC                            |                | VA    | 0.5   |
| Sealing AC                            |                | VA    | 0.5   |
| Duty factor                           |                | % DF  | 100   |
| Maximum operating frequency           |                | Ops/h | 4000  |
| Minimum command time                  |                |       |       |
| AC                                    |                | ms    | 50    |
| Repetition accuracy (deviation)       |                | %     | ≤ 0.5 |
| Recovery time (after 100% time delay) |                | ms    | 70    |
| Contact changeover time               | t <sub>u</sub> | ms    | 4     |

## Electromagnetic compatibility (EMC)

|                                                               |  |     |                                                                            |
|---------------------------------------------------------------|--|-----|----------------------------------------------------------------------------|
| Electrostatic discharge (ESD)                                 |  |     |                                                                            |
| applied standard                                              |  |     | IEC/EN 61000-4-2                                                           |
| Air discharge                                                 |  | kV  | 8                                                                          |
| Contact discharge                                             |  | kV  | 6                                                                          |
| Electromagnetic fields (RFI)                                  |  |     |                                                                            |
| applied standard                                              |  |     | IEC/EN 61000-4-3                                                           |
|                                                               |  | V/m | 80 - 1000 MHz: 10<br>1.4 - 2 GHz: 3<br>2.0 - 2.7 GHz: 1                    |
| Radio interference suppression                                |  |     | EN 55011, Class B (conducted)<br>EN 55011, Class B (radiated)              |
| Burst                                                         |  | kV  | Supply cables: 2<br>Signal cables: 1<br>according to IEC/EN 61000-4-4      |
| power pulses (Surge)                                          |  |     | 2 kV (symmetrical)<br>4 kV (asymmetrical)<br>according to IEC/EN 61000-4-5 |
| Immunity to line-conducted interference to (IEC/EN 61000-4-6) |  | V   | 10                                                                         |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|--------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                    |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 6                                                                  |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 1.4                                                                |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 0                                                                  |
| Static heat dissipation, non-current-dependent                                                                         | P <sub>vs</sub>   | W  | 0.5                                                                |
| Heat dissipation capacity                                                                                              | P <sub>diss</sub> | W  | 0                                                                  |
| Operating ambient temperature min.                                                                                     |                   | °C | -25                                                                |
| Operating ambient temperature max.                                                                                     |                   | °C | 60                                                                 |
| IEC/EN 61439 design verification                                                                                       |                   |    |                                                                    |
| 10.2 Strength of materials and parts                                                                                   |                   |    |                                                                    |
| 10.2.2 Corrosion resistance                                                                                            |                   |    | Meets the product standard's requirements.                         |
| 10.2.3.1 Verification of thermal stability of enclosures                                                               |                   |    | Meets the product standard's requirements.                         |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat                                             |                   |    | Meets the product standard's requirements.                         |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |                   |    | Meets the product standard's requirements.                         |
| 10.2.4 Resistance to ultra-violet (UV) radiation                                                                       |                   |    | Meets the product standard's requirements.                         |
| 10.2.5 Lifting                                                                                                         |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.6 Mechanical impact                                                                                               |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.7 Inscriptions                                                                                                    |                   |    | Meets the product standard's requirements.                         |
| 10.3 Degree of protection of ASSEMBLIES                                                                                |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.4 Clearances and creepage distances                                                                                 |                   |    | Meets the product standard's requirements.                         |
| 10.5 Protection against electric shock                                                                                 |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.6 Incorporation of switching devices and components                                                                 |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.7 Internal electrical circuits and connections                                                                      |                   |    | Is the panel builder's responsibility.                             |

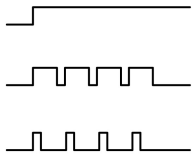
|                                                          |  |  |                                                                                                                                  |
|----------------------------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------|
| 10.8 Connections for external conductors                 |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.9 Insulation properties                               |  |  |                                                                                                                                  |
| 10.9.2 Power-frequency electric strength                 |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.9.3 Impulse withstand voltage                         |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.9.4 Testing of enclosures made of insulating material |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.10 Temperature rise                                   |  |  | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                               |  |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility                      |  |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function                                |  |  | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

## Technical data ETIM 7.0

|                                                                                                                                                                       |  |    |                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|------------------|
| Relays (EG000019) / Timer relay (EC001439)                                                                                                                            |  |    |                  |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Relay and socket / Timed relay (ecl@ss10.0.1-27-37-16-05 [AKF092013]) |  |    |                  |
| Type of electric connection                                                                                                                                           |  |    | Screw connection |
| Function delay-on energization                                                                                                                                        |  |    | Yes              |
| Function delay on de-energization                                                                                                                                     |  |    | Yes              |
| Function floating contact on energization                                                                                                                             |  |    | Yes              |
| Function floating contact on de-energization                                                                                                                          |  |    | Yes              |
| Function star-delta                                                                                                                                                   |  |    | No               |
| Function pulse shaping                                                                                                                                                |  |    | Yes              |
| Function flashing, starting with pause, fixed time                                                                                                                    |  |    | Yes              |
| Function flashing, starting with pulse, fixed time                                                                                                                    |  |    | Yes              |
| Clock function, starting with pause, variable                                                                                                                         |  |    | Yes              |
| Clock function, starting with pulse, variable                                                                                                                         |  |    | Yes              |
| With plug-in socket                                                                                                                                                   |  |    | No               |
| Remote operation possible                                                                                                                                             |  |    | No               |
| Suitable for remote control                                                                                                                                           |  |    | No               |
| Pluggable on auxiliary contact block                                                                                                                                  |  |    | No               |
| Rated control supply voltage Us at AC 50HZ                                                                                                                            |  | V  | 400 - 400        |
| Rated control supply voltage Us at AC 60HZ                                                                                                                            |  | V  | 400 - 400        |
| Rated control supply voltage Us at DC                                                                                                                                 |  | V  | 0 - 0            |
| Voltage type for actuating                                                                                                                                            |  |    | AC               |
| Nominal current                                                                                                                                                       |  | A  | 3                |
| Time range                                                                                                                                                            |  | s  | 0.05 - 360000    |
| Number of outputs, undelayed, normally closed contact                                                                                                                 |  |    | 0                |
| Number of outputs, undelayed, normally open contact                                                                                                                   |  |    | 0                |
| Number of outputs, undelayed, change-over contact                                                                                                                     |  |    | 1                |
| Number of outputs, delayed, normally closed contact                                                                                                                   |  |    | 0                |
| Number of outputs, delayed, normally open contact                                                                                                                     |  |    | 0                |
| Number of outputs, delayed, change-over contact                                                                                                                       |  |    | 1                |
| Outputs, reversible delayed/undelayed                                                                                                                                 |  |    | Yes              |
| With semiconductor output                                                                                                                                             |  |    | No               |
| Suitable for DIN rail (top hat rail) mounting                                                                                                                         |  |    | Yes              |
| Suitable for front mounting                                                                                                                                           |  |    | No               |
| Width                                                                                                                                                                 |  | mm | 23               |
| Height                                                                                                                                                                |  | mm | 83               |
| Depth                                                                                                                                                                 |  | mm | 103              |

## Characteristics

|                                          |
|------------------------------------------|
| <b>Flow diagram for timing functions</b> |
| LED legend                               |



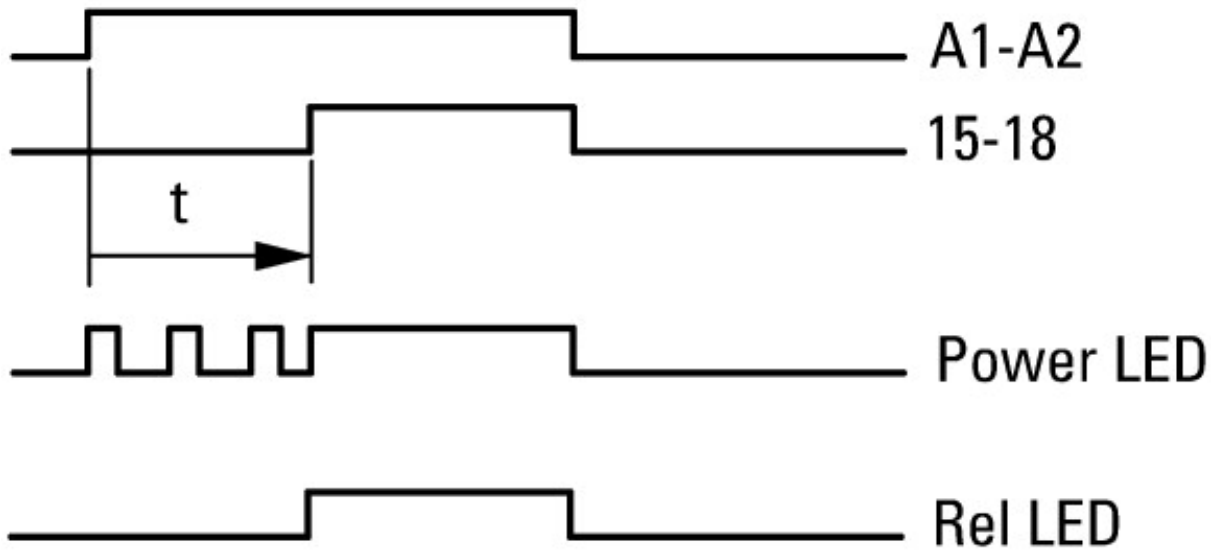
Time not running, contact 15 – 18 closed

Time running, contact 15 – 18 closed

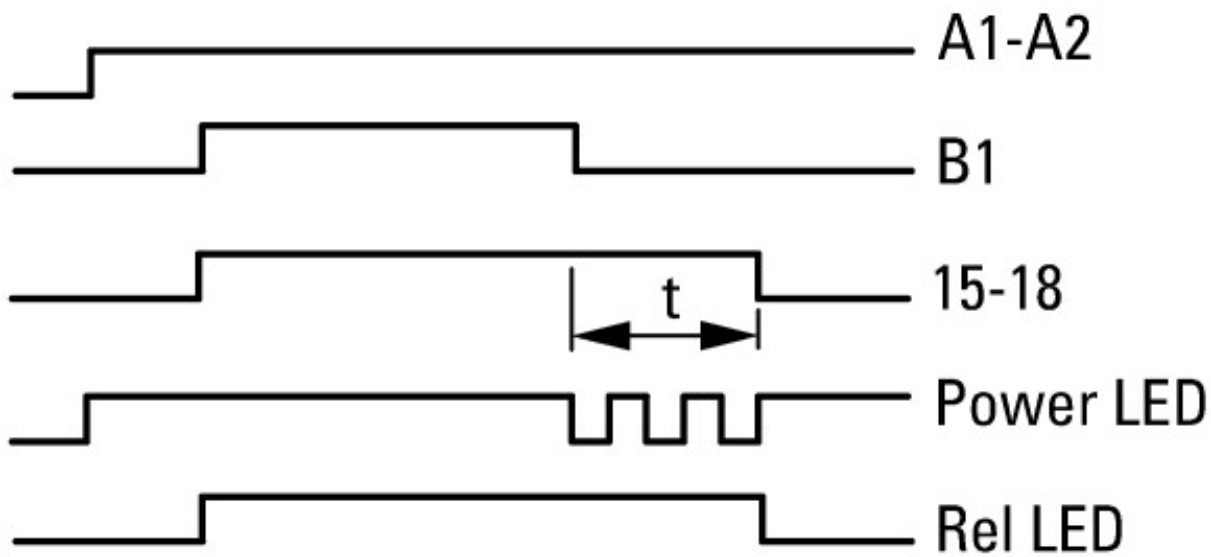
Time running, contact 15 – 18 not closed

- ① A2/A1 linked
- ② A2/A1 not linked

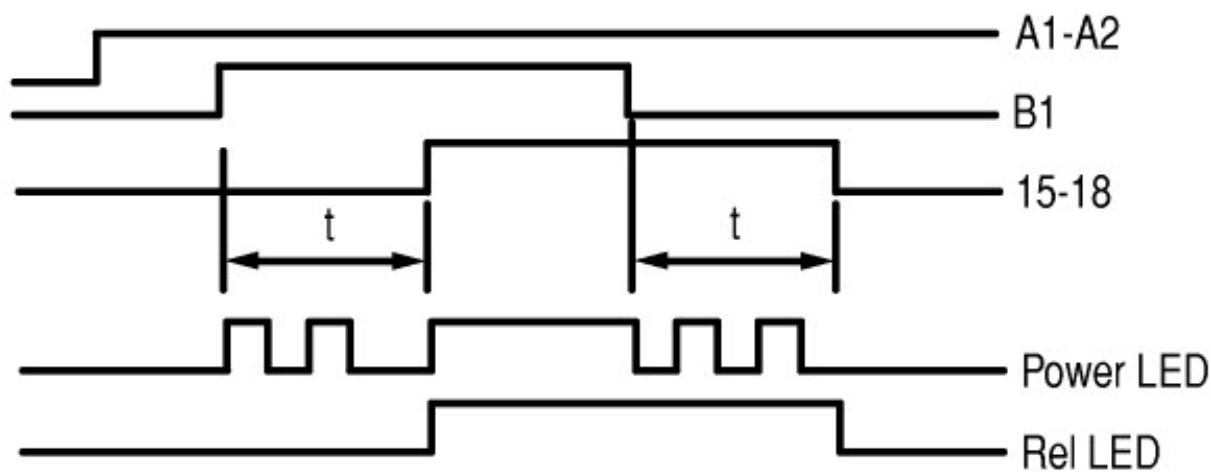
#### 11 On-delayed



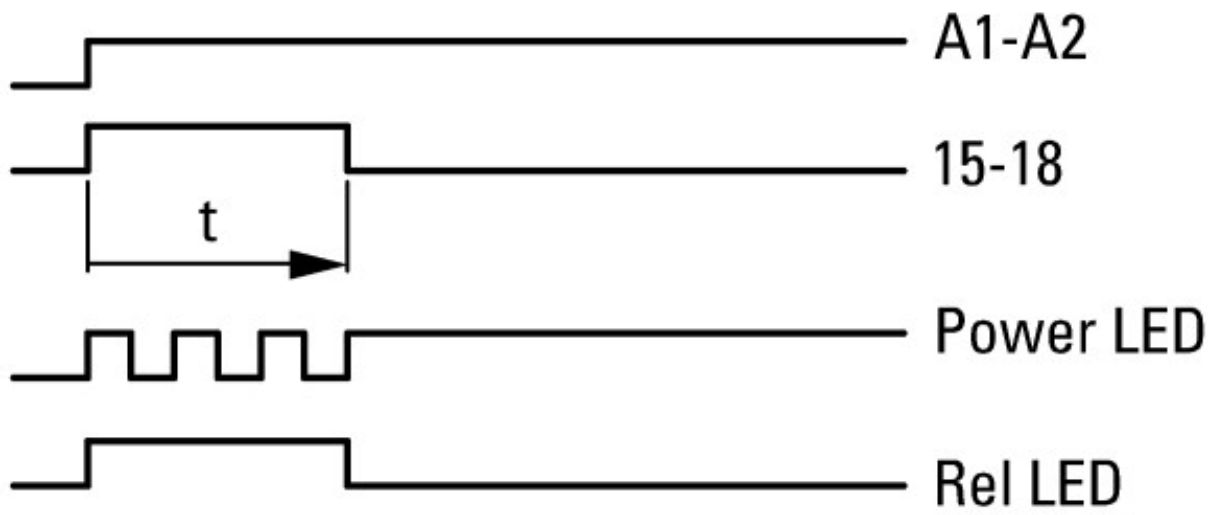
#### 12 Off-delayed



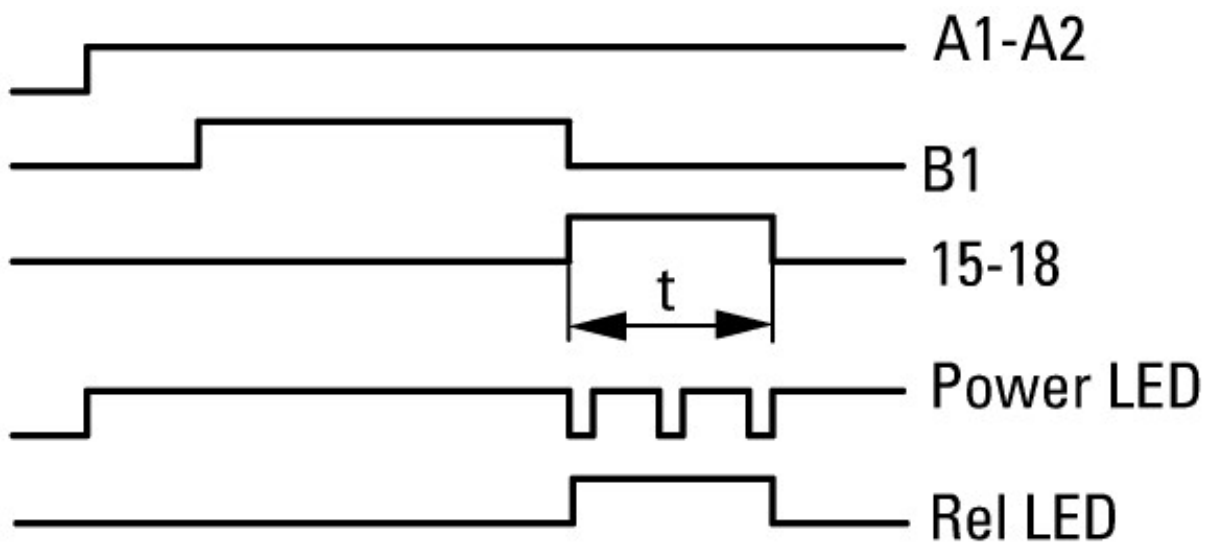
#### 16 On- and Off-delayed



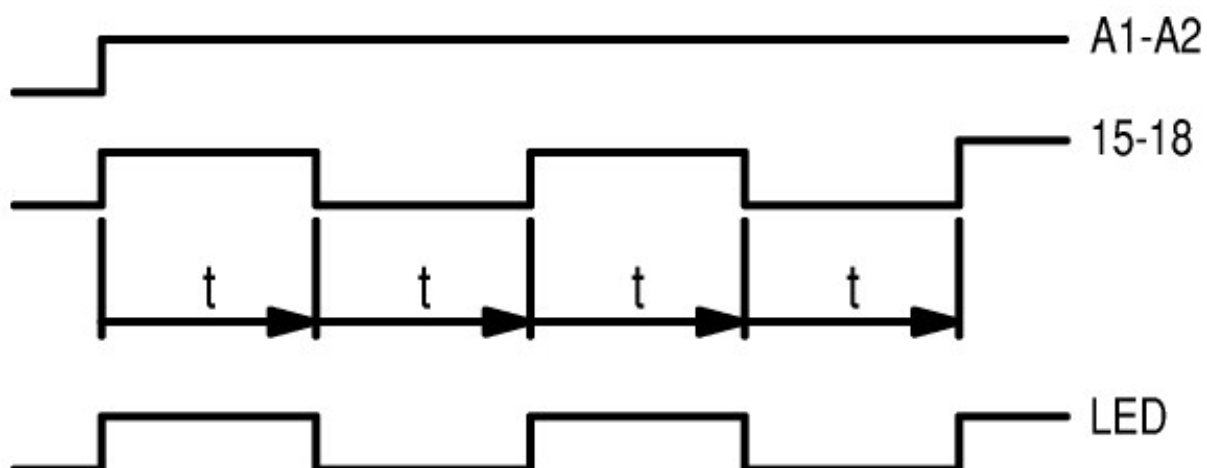
# 21 Fleeting contact on energization



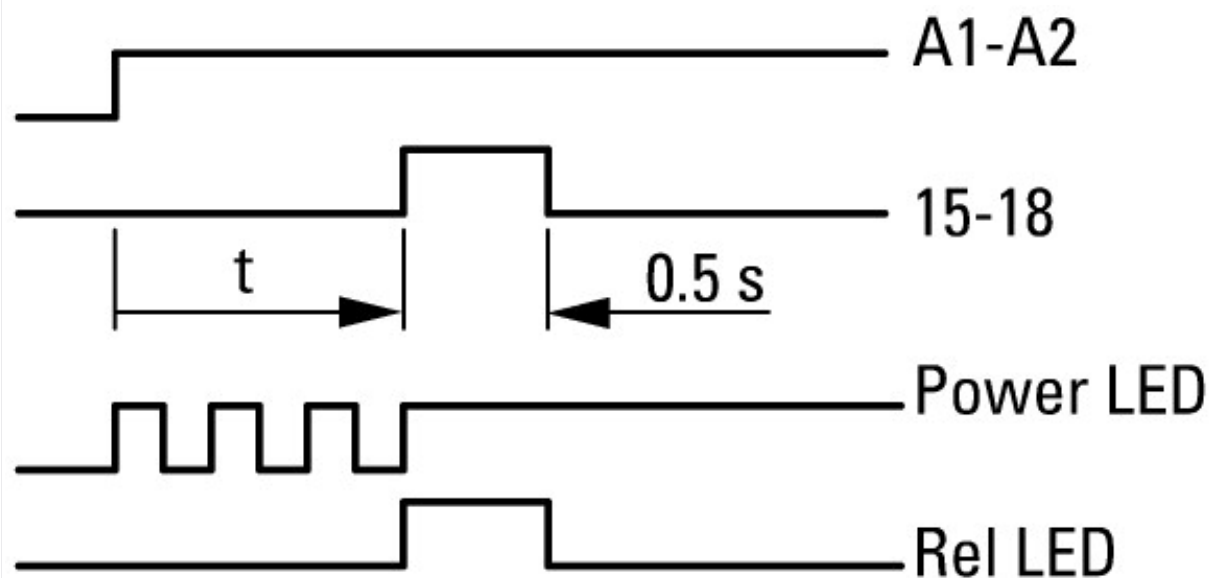
# 22 Fleeting contact on de-energization



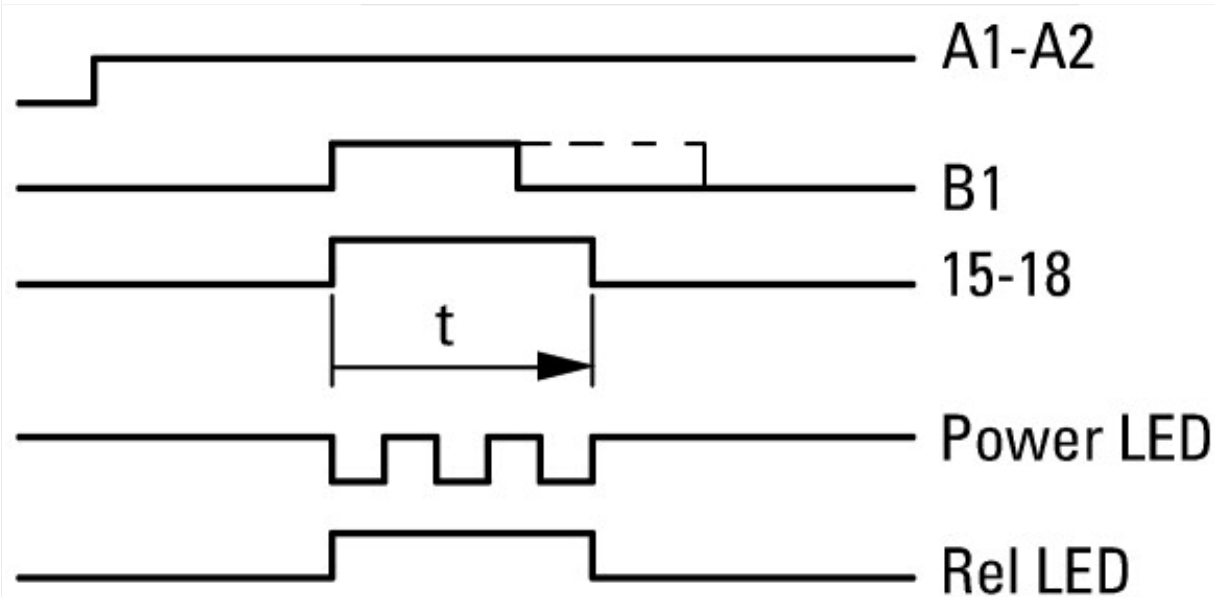
# 42 Flashing, pulse initiating



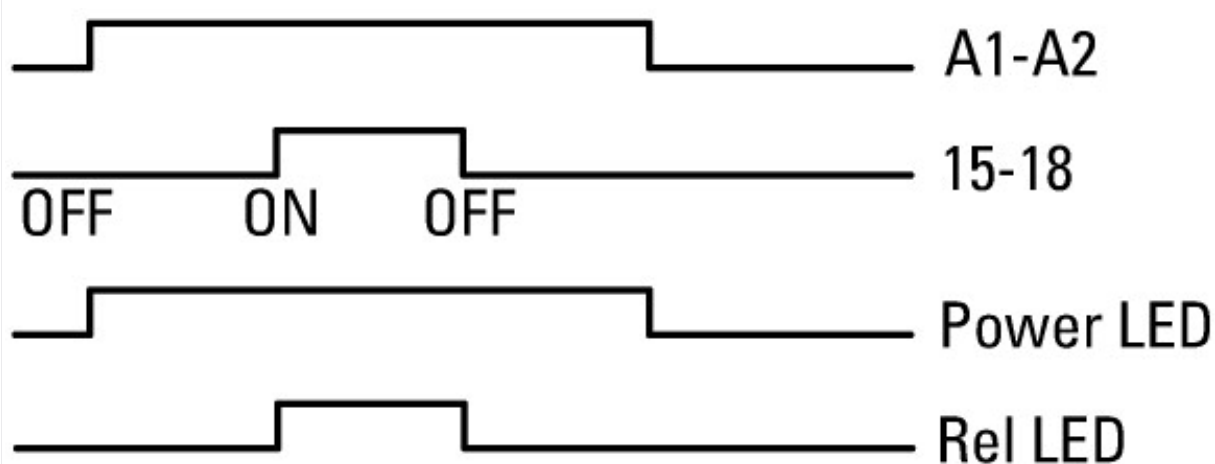
# 81 Pulse generating



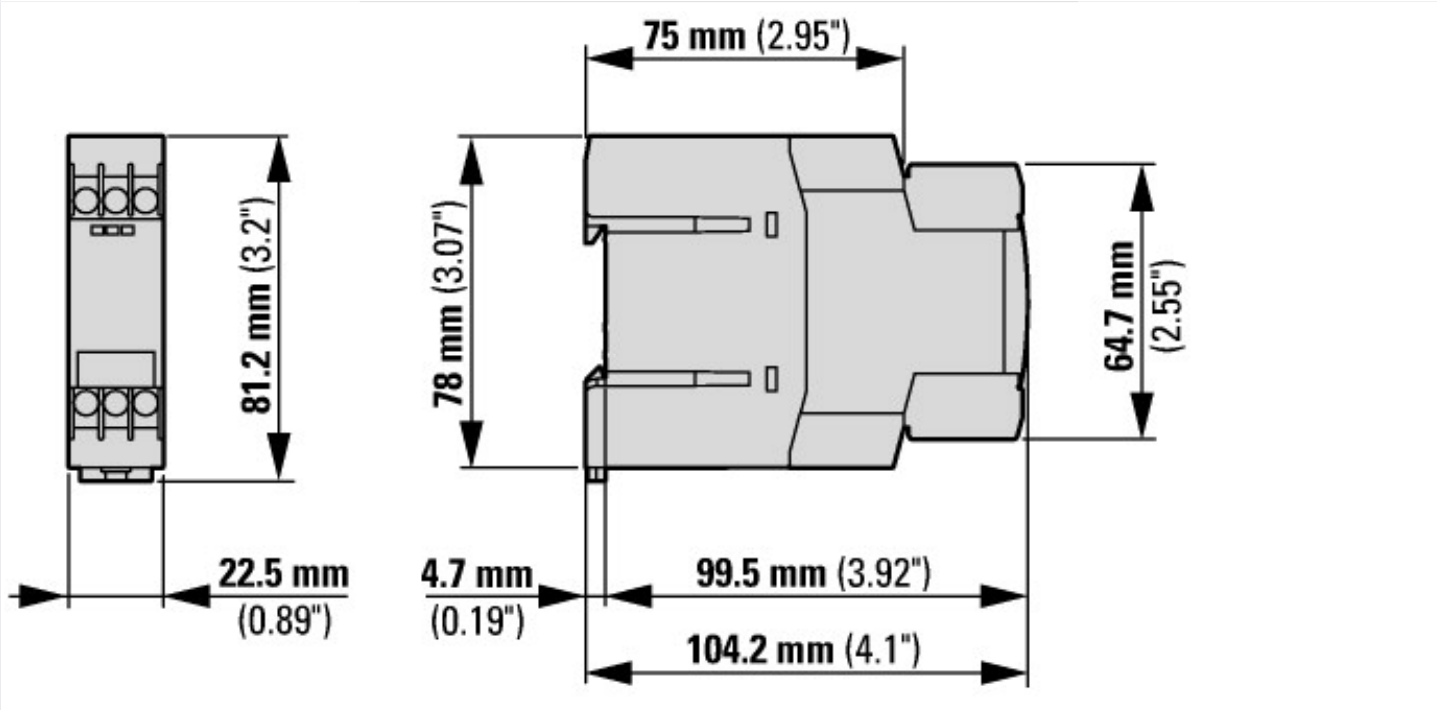
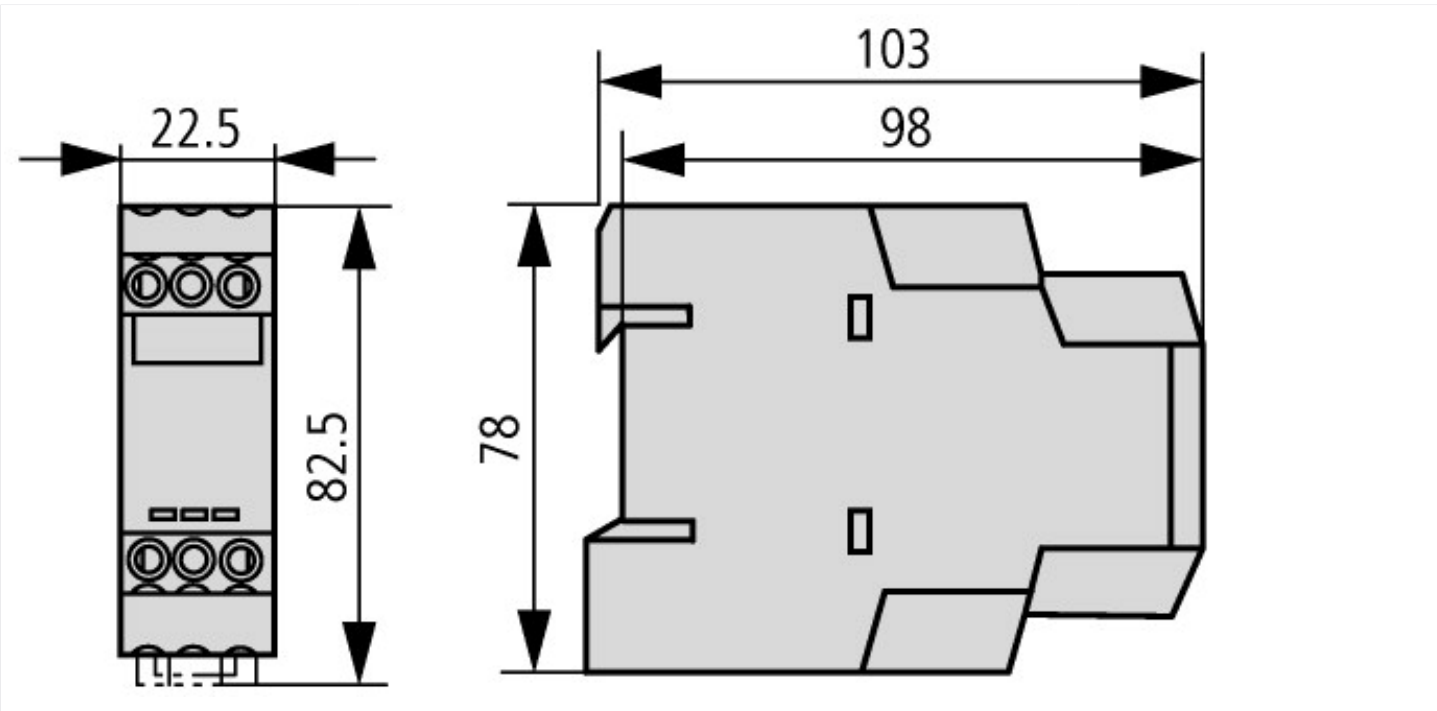
82 Pulse shaping



On-Off function



Dimensions



Applies to release 001 and higher

Additional product information (links)

IL049003ZU Timing relay

IL049003ZU Timing relay

[https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL049003ZU2019\\_08.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL049003ZU2019_08.pdf)