



### Time relays



- multifunctional
- switching on and off delays
- cyclic
- digital (electronic)

Use in automation and control systems for equipment such as pumps, motors, lighting, heating, etc.



### Temperature regulators

They are used to maintain a given temperature regime, heating of premises, control of heating and cooling devices.



### Voltage control relays

They are used to monitor the mains voltage and shut down equipment in the event of an increase or decrease in the mains voltage, asymmetry, or incorrect phase sequence.



### Twilight switches

- twilight relay
- staircase lighting relay

They are used to automatically turn on the lighting at dusk and turn it off at dawn. For turning on and off the lighting on stairs with a delay or from different floors.



### Impulse relays

- Pulse - bistable relays with memory

They are used in automation systems to control lighting or any device from different points.



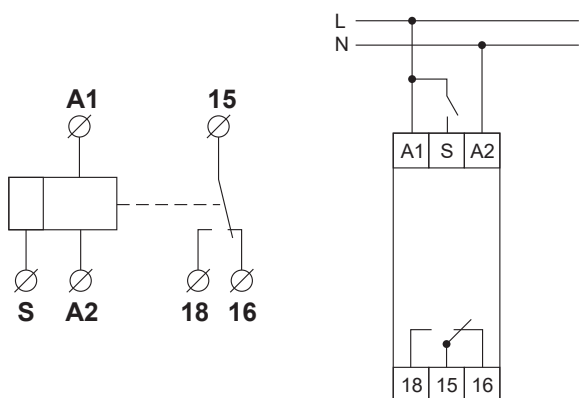
It is used for different switching options depending on the time.  
Used in automation and equipment control systems.



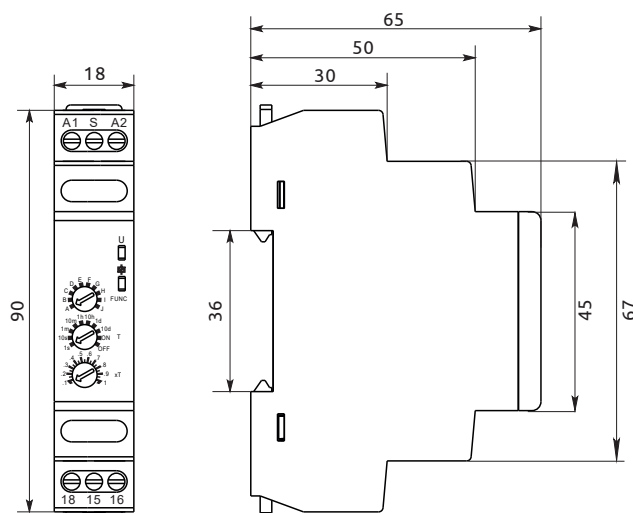
## Technical specifications

|                                                         |                                  |
|---------------------------------------------------------|----------------------------------|
| Series                                                  | FRT14 12                         |
| Standards                                               | EN/IEC 60730-1, EN/IEC 60730-2-7 |
| Power supply terminals                                  | A1, A2                           |
| Pulse terminal                                          | S                                |
| AC/DC supply voltage, V                                 | 12-240                           |
| Rated frequency f, Hz                                   | 50/60                            |
| Time range                                              | 0.1s - 10 days                   |
| Installation accuracy                                   | <5%                              |
| Repeat accuracy                                         | <0.2%                            |
| Number of contacts                                      | 1 C/O                            |
| Rated current of contacts I <sub>n</sub> , A            | 8A/AC1                           |
| Insulation voltage U <sub>i</sub> , V                   | 250                              |
| Degree of protection                                    | IP20                             |
| Pollution level                                         | 3                                |
| Electrical wear resistance                              | 10 <sup>5</sup>                  |
| Mechanical wear resistance                              | 10 <sup>6</sup>                  |
| Cross-section of connecting conductors, mm <sup>2</sup> | 0.5-2,5                          |
| Bolt clamping torque, Nm                                | 0.5                              |
| DIN rail mounting                                       | TN35                             |

## Schematic diagrams



## Overall dimensions



| Order code | Full name of                                              | Packaging, pcs |     | Unit  | Gross weight, kg |       |
|------------|-----------------------------------------------------------|----------------|-----|-------|------------------|-------|
|            |                                                           | Packaging      | Box |       | Packaging        | Box   |
| FRT14 12   | Multifunction time relay FRT14 12<br>12-240VAC/DC,50/60HZ | 1              | 100 | 0,070 | 0,080            | 8,000 |



It is used to delay the switching after the supply voltage is applied.

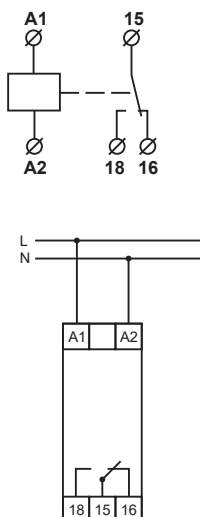


## Technical specifications

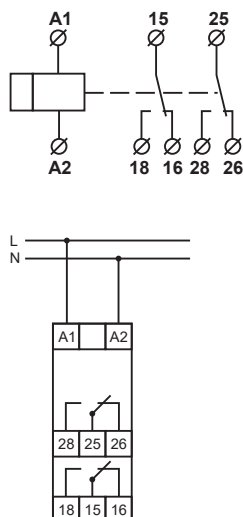
|                                                         |                                  |          |
|---------------------------------------------------------|----------------------------------|----------|
| Series                                                  | FRT14 21                         | FRT14 22 |
| Standards                                               | EN/IEC 60730-1, EN/IEC 60730-2-7 |          |
| Power supply terminals                                  | A1, A2                           |          |
| AC/DC supply voltage, V                                 | 12-240                           | 24-240   |
| Rated frequency f, Hz                                   | 50/60                            |          |
| Time range                                              | 0.1s - 10 days                   |          |
| Installation accuracy                                   | <5%                              |          |
| Repeat accuracy                                         | <0.2%                            |          |
| Number of contacts                                      | 1 C/O                            | 2 C/O    |
| Rated current of contacts I <sub>n</sub> , A            | 8A/AC1                           |          |
| Insulation voltage U <sub>i</sub> , V                   | 250                              |          |
| Degree of protection                                    | IP20                             |          |
| Pollution level                                         | 3                                |          |
| Electrical wear resistance                              | 10 <sup>5</sup>                  |          |
| Mechanical wear resistance                              | 10 <sup>6</sup>                  |          |
| Cross-section of connecting conductors, mm <sup>2</sup> | 0.5-2,5                          |          |
| DIN rail mounting                                       | TN35                             |          |

## Schematic diagrams

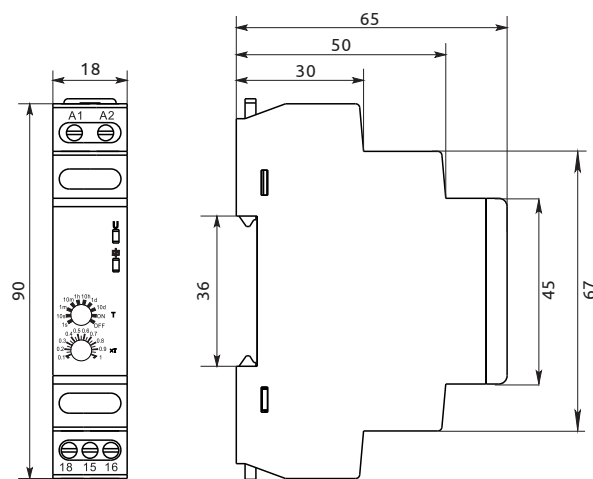
FRT14 21



FRT14 22



## Overall dimensions



| Order code | Full name of                    | Packaging, pcs |     | Unit  | Gross weight, kg |       |
|------------|---------------------------------|----------------|-----|-------|------------------|-------|
|            |                                 | Packaging      | Box |       | Packaging        | Box   |
| FRT14 21   | Switch-off delay relay FRT14 21 | 1              | 100 | 0,070 | 0,080            | 8,000 |
| FRT14 22   | Switch-off delay relay FRT14 22 | 1              | 100 | 0,080 | 0,090            | 9,000 |



It is used to delay the switching after the supply voltage is applied.

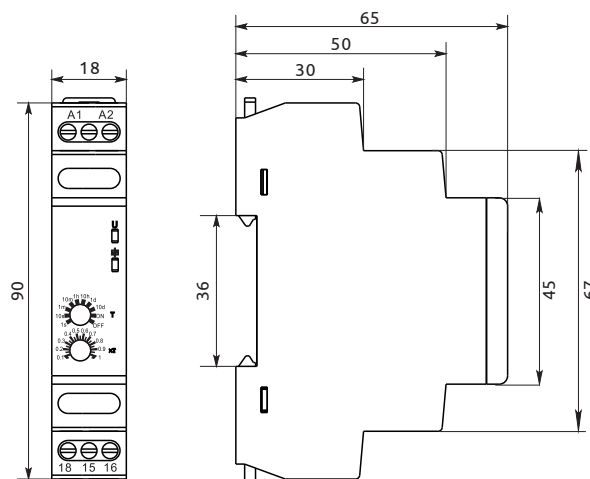
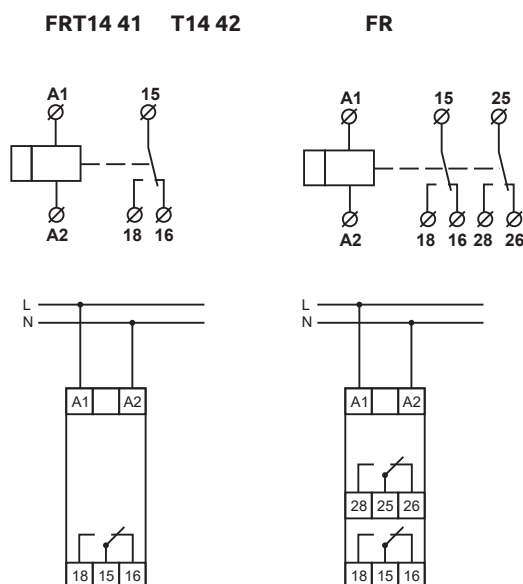


## Technical specifications

|                                                         |                                  |          |
|---------------------------------------------------------|----------------------------------|----------|
| Series                                                  | FRT14 41                         | FRT14 41 |
| Standards                                               | EN/IEC 60730-1, EN/IEC 60730-2-7 |          |
| Power supply terminals                                  | A1, A2                           |          |
| AC/DC supply voltage, V                                 | 12-240                           | 24-240   |
| Rated frequency f, Hz                                   | 50/60                            |          |
| Time range                                              | 0.1s - 10 days                   |          |
| Installation accuracy                                   | <5%                              |          |
| Repeat accuracy                                         | <0.2%                            |          |
| Number of contacts                                      | 1 C/O                            | 2 C/O    |
| Rated current of contacts I <sub>n</sub> , A            | 8A/AC1                           |          |
| Insulation voltage U <sub>i</sub> , V                   | 250                              |          |
| Degree of protection                                    | IP20                             |          |
| Pollution level                                         | 3                                |          |
| Electrical wear resistance                              | 10 <sup>5</sup>                  |          |
| Mechanical wear resistance                              | 10 <sup>6</sup>                  |          |
| Cross-section of connecting conductors, mm <sup>2</sup> | 0.5-2,5                          |          |
| DIN rail mounting                                       | TN35                             |          |

## Schematic diagrams

## Overall dimensions



| Order code | Full name of                   | Packaging, pcs |     | Unit  | Gross weight, kg |       |
|------------|--------------------------------|----------------|-----|-------|------------------|-------|
|            |                                | Packaging      | Box |       | Packaging        | Box   |
| FRT14 41   | Switch-on delay relay FRT14 41 | 1              | 100 | 0,070 | 0,080            | 8,000 |
| FRT14 42   | Switch-on delay relay FRT14 42 | 1              | 100 | 0,080 | 0,090            | 9,000 |



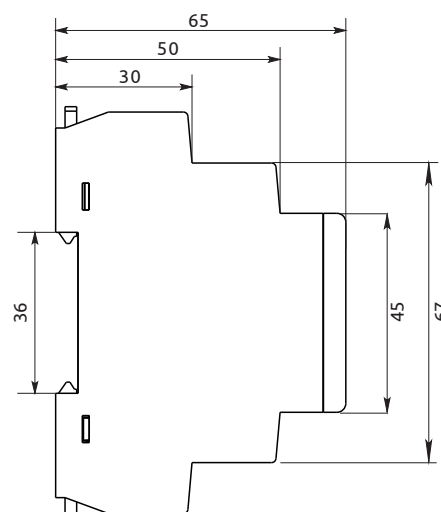
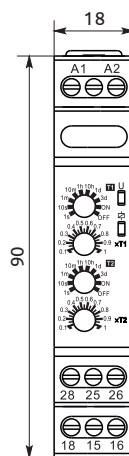
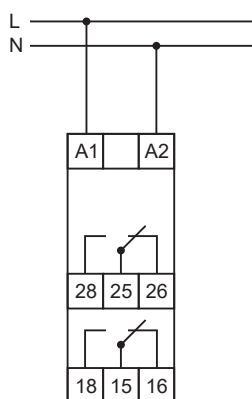
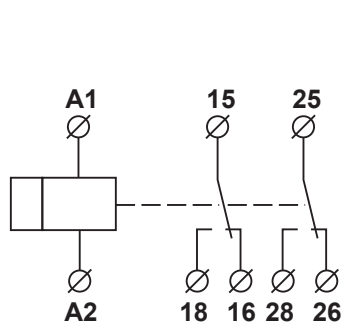
It is used to delay the switching after the supply voltage is applied.



## Technical specifications

|                                                         |                                  |
|---------------------------------------------------------|----------------------------------|
| Series                                                  | FRT14 43                         |
| Standards                                               | EN/IEC 60730-1, EN/IEC 60730-2-7 |
| Power supply terminals                                  | A1, A2                           |
| AC/DC supply voltage, V                                 | 24-240                           |
| Rated frequency f, Hz                                   | 50/60                            |
| Time range                                              | 0.1s - 10 days                   |
| Installation accuracy                                   | <5%                              |
| Repeat accuracy                                         | <0.2%                            |
| Number of contacts                                      | 2 C/O                            |
| Rated current of contacts I <sub>n</sub> , A            | 8A/AC1                           |
| Insulation voltage U <sub>i</sub> , V                   | 250                              |
| Degree of protection                                    | IP20                             |
| Pollution level                                         | 3                                |
| Electrical wear resistance                              | 10 <sup>5</sup>                  |
| Mechanical wear resistance                              | 10 <sup>6</sup>                  |
| Cross-section of connecting conductors, mm <sup>2</sup> | 0.5-2,5                          |
| DIN rail mounting                                       | TN35                             |

## Schematic diagrams



## Overall dimensions

| Order code | Full name of                                           | Packaging, pcs |     | Unit  | Gross weight, kg |       |
|------------|--------------------------------------------------------|----------------|-----|-------|------------------|-------|
|            |                                                        | Packaging      | Box |       | Packaging        | Box   |
| FRT14 43   | Switch-on delay relay<br>FRT14 43 24-240VAC/DC,50/60HZ | 1              | 100 | 0,080 | 0,090            | 9,000 |



It is used to delay the switching after the supply voltage is applied.

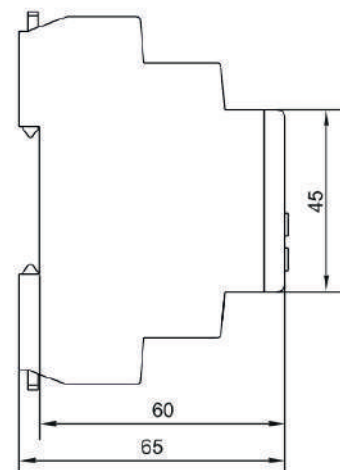
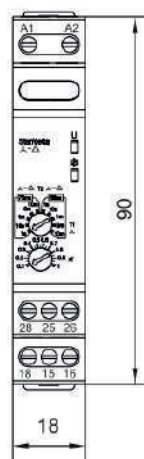
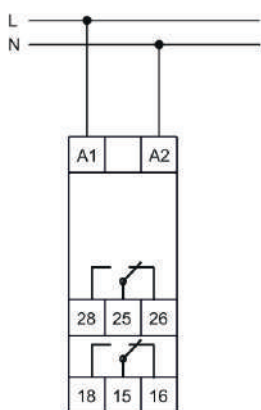
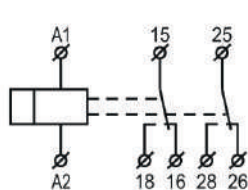


## Technical specifications

|                                                         |                                  |
|---------------------------------------------------------|----------------------------------|
| Series                                                  | FRT47                            |
| Standards                                               | EN/IEC 60730-1, EN/IEC 60730-2-7 |
| Power supply terminals                                  | A1, A2                           |
| Rated voltage of the AC/DC control circuit, V           | 12-240                           |
| Insulation voltage $U_i$ , V                            | 250                              |
| Rated frequency $f$ , Hz                                | 50/60                            |
| Operating setpoint time for the star circuit            | 0.1s - 10 minutes                |
| Switching time, ms                                      | 75/150                           |
| Time reference error                                    | <5%                              |
| Maximum switched current of AC 1/AC15 contacts, A       | 16/3                             |
| Number of contacts                                      | 2 C/O                            |
| Own power consumption, VA                               | 1                                |
| Degree of protection                                    | IP20                             |
| Pollution level                                         | 3                                |
| Wear resistance (electrical/mechanical)                 | $10^5/10^6$                      |
| Cross-section of connecting conductors, mm <sup>2</sup> | 0.5 ... 2.5                      |
| Bolt clamping torque, Nm                                | 0.5                              |
| DIN rail mounting                                       | yes                              |

## Schematic diagrams

## Overall dimensions



| Order code | Full name of                | Packaging, pcs |     | Gross weight, kg |           |       |
|------------|-----------------------------|----------------|-----|------------------|-----------|-------|
|            |                             | Packaging      | Box | Unit             | Packaging | Box   |
| FRT47      | Star/delta time relay FRT47 | 1              | 100 | 0,100            | 0,100     | 10,00 |



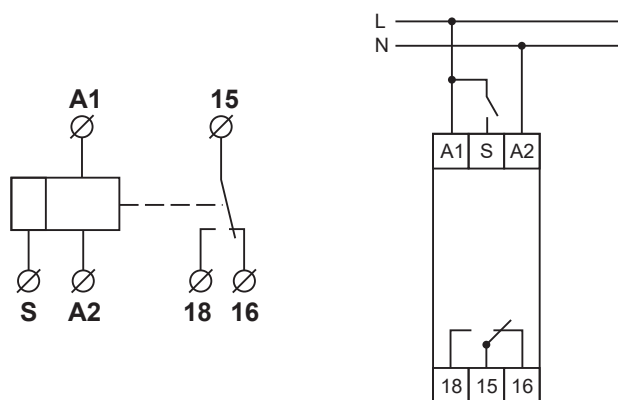
It is used for mechanisms that require intermittent operation. When the supply voltage is applied, the switching is cyclic, with the specified time intervals T1, T2 separately.



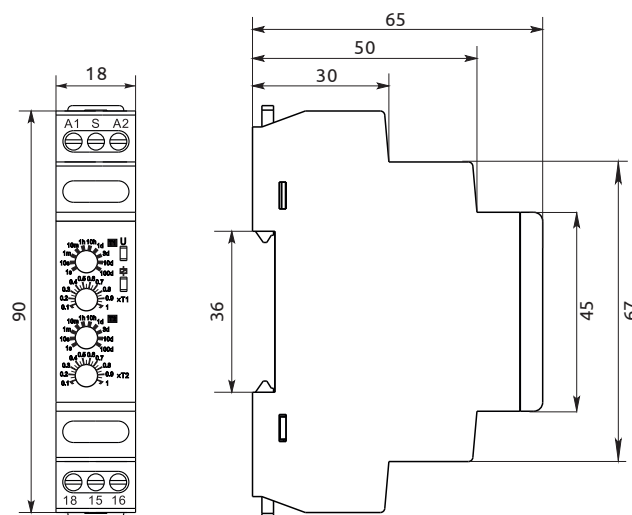
## Technical specifications

|                                                         |                                  |
|---------------------------------------------------------|----------------------------------|
| Series                                                  | FRT14 51                         |
| Standards                                               | EN/IEC 60730-1, EN/IEC 60730-2-7 |
| Power supply terminals                                  | A1, A2                           |
| Pulse terminal                                          | S                                |
| AC supply voltage, V                                    | 220                              |
| Rated frequency f, Hz                                   | 50/60                            |
| Time range                                              | 0.1s - 100 days                  |
| Installation accuracy                                   | <5%                              |
| Repeat accuracy                                         | <0.2%                            |
| Number of contacts                                      | 1 C/O                            |
| Rated current of contacts I <sub>n</sub> , A            | 8A/AC1                           |
| Insulation voltage U <sub>i</sub> , V                   | 250                              |
| Degree of protection                                    | IP20                             |
| Pollution level                                         | 3                                |
| Electrical wear resistance                              | 10 <sup>5</sup>                  |
| Mechanical wear resistance                              | 10 <sup>6</sup>                  |
| Cross-section of connecting conductors, mm <sup>2</sup> | 0.5-2,5                          |
| DIN rail mounting                                       | TN35                             |

## Schematic diagrams



## Overall dimensions



| Order code | Full name of          | Packaging, pcs |     | Gross weight, kg |           |       |
|------------|-----------------------|----------------|-----|------------------|-----------|-------|
|            |                       | Packaging      | Box | Unit             | Packaging | Box   |
| FRT14 51   | Cyclic relay FRT14 51 | 1              | 100 | 0,070            | 0,080     | 8,000 |