

## Multifunctional time delay relay, optional with instantaneous contact

### MFT SU31S



MFT SU31S

- **14 Functions, 16 time ranges**
- **Multivoltage:**  
**24 VAC/DC and 110 ... 240 VAC**
- **2 output contacts**

#### Functions, optional with instantaneous contact

- E** Delay on
- A** Delay off
- E1** Delay on with control contact
- I1** Pulse limitation timer voltage control
- I2** Pulse extension with control contact
- W2** Wiping on trailing edge with control contact
- B2** Cycling timer starting on a pause

- 11** Immediate contact and delayed contact
- 20** Both contacts are delayed contacts

#### Time end ranges

Adjustment range 0,05 s ... 30 days (

#### Output relay

2 changes

250 Vac 5 A units close together, 8 A units not close together

#### Indicators

Green LED ON: indication of supply voltage

Green LED flashes: indication of time

Yellow LED ON/OFF: indication of relay output

#### Connecting voltage

24 VDC  $\pm 10\%$

24 VAC -15% ... +10%

110 ... 240 VAC -15% ... +10%

#### Reference data

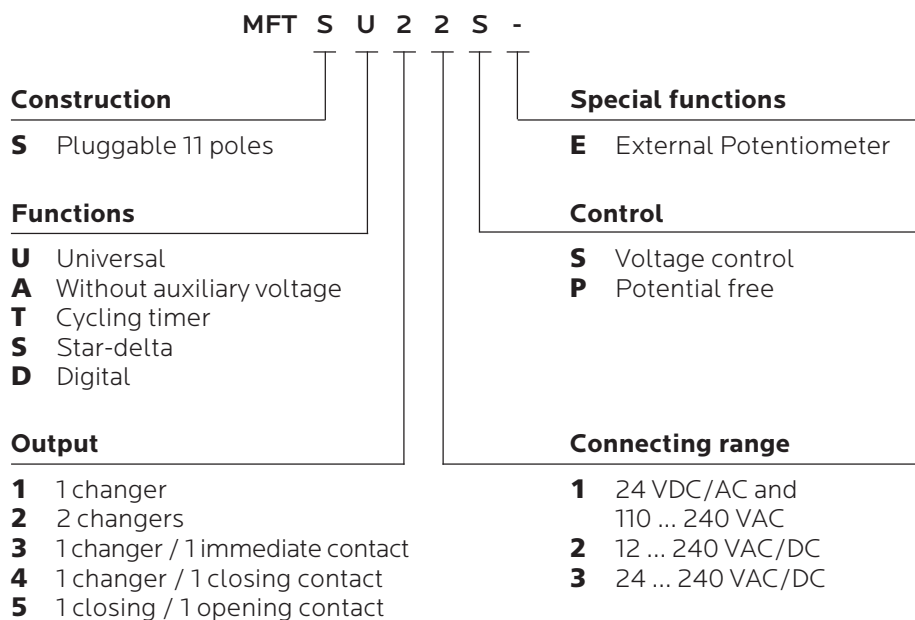
Selectron® MFT	Article no.
MFT-SU31S	41140003
(Order data see chapter 1)	

# Multifunctional time delay relay, optional with instantaneous contact

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Technical data	
<b>Nominal consumption</b>	
24 VAC/DC	0.8 VA / 0.6 W
110 VAC	2.5 VA / 0.7 W
240 VAC	20 VA / 1.0 W
<b>Control contact / Voltage controlled</b>	
Parallel switching of loads possible	
Parallel minimum load	1 VA or 0.5 W
Voltage dependence:	The potential between connections 2 and 5, resp. 7 and 5, must cover 90% of the supply voltage
Connecting length between connections 10 and 5:	10 m or capacity <10 nF
Resistance	>1 MΩ (contact K2 open)
Rest current at parallel load:	approx. 2 mA at contact K2 open
Control pulse length	DC min. 50 ms AC min.100 ms
<b>Accuracy</b>	
Base accuracy	±5% of scale limit
Repeatability	
of the scale limit at constant conditions	±5% or ±100 ms
Adjustment accuracy	<5% of scale limit
Temperature influence	≤0.05% / °C
<b>Reaction times</b>	
Operating return time K1	max. 60 ms / 30 ms
Reaction time K2	max. 30 ms
Min. pulse/pause time K2	AC 50 ms / DC 50 ms
Recovery time	max. 100 ms

## Type key



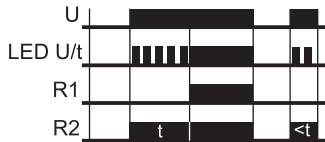
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## Function descriptions

### E-11 - Delay on

When the supply voltage U (K1 closed) is applied, the instantaneous contact switches into on-position and

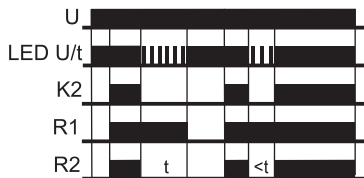


the set interval  $t$  begins (green LED U/t flashes). After the interval  $t$  has expired (green LED U/t illuminated) the delayed contact switches into on-position (yellow LED R illuminated).

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 is restarted when the supply voltage is next applied.

### A-11 - Delay off

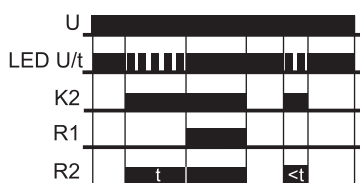
The supply voltage U (K1 closed) must be constantly applied to the device (green LED U/t illuminated). When the control contact K2 is closed, both contacts switch into



on-position (yellow LED R illuminated). If the control contact is opened, the instantaneous contact switches into off-position and the set interval  $t$  begins (green LED U/t flashes). After the interval  $t$  has expired (green LED U/t illuminated) the delayed contact switches into off-position (yellow LED R not illuminated). If the control contact is closed again before the interval  $t$  has expired, the interval already expired is erased and is restarted with the next cycle.

### E1-11 - Delay on with control contact

The supply voltage U (K1 closed) must be constantly applied to the device (green LED U/t illuminated).



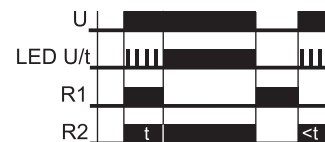
When the control contact K2 is closed, the instantaneous contact switches into on-position and the set interval  $t$  begins (green LED U/t flashes). After

the interval  $t$  has expired (green LED U/t illuminated) the delayed contact switches into on-position (yellow LED R 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 is restarted with the next cycle.

### I1-11 - Pulse limitation timer voltage control

When the supply voltage U (K1 closed) is applied, both contacts switch into on-position (yellow LED R

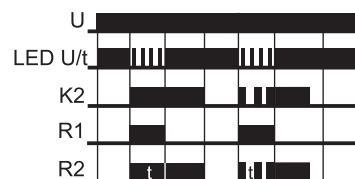


illuminated) and the set interval  $t$  begins (green LED U/t flashes). After the interval  $t$  has expired (green LED U/t illuminated) the delayed contact switches into off-position (yellow LED R not illuminated). This status remains until the supply voltage is interrupted.

If the supply voltage is interrupted before the interval  $t$  has expired, both contacts switch into off-position. The interval already expired is erased and is restarted when the supply voltage is next applied.

### I2-11 - Pulse extension with control contact

The supply voltage U (K1 closed) must be constantly applied to the device (green U/t LED illuminated).



When the control contact K2 is closed, both contacts switch into on-position (yellow LED R illuminated) and the set interval  $t$  begins (green LED U/t flashes). After the interval  $t$  has expired (green LED U/t illuminated) the delayed contact switches into off-position (yellow LED R not illuminated). The instantaneous contact remains in on-position, until the control contact is opened again. During the interval, the control contact (and the instantaneous contact) can be operated any number of times. A further cycle can only be started when the cycle run has been completed.

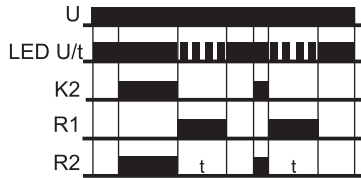
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## Function descriptions

### W2-11 - Wiping on trailing edge with control contact

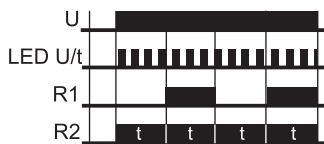
The supply voltage U (K1 closed) must be constantly applied to the device (green LED U/t illuminated).



When the control contact K2 is closed the instantaneous contact switches into on-position. When the control contact K2 is opened, the instantaneous contact switches into off-position, the delayed contact switches into on-position (yellow LED R illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the delayed contact switches into off-position (yellow LED R not illuminated). During the interval, the control contact (and the instantaneous contact) can be operated any number of times. A further cycle can only be started when the cycle run has been completed.

### B2-11 - Cycling timer starting on a pause

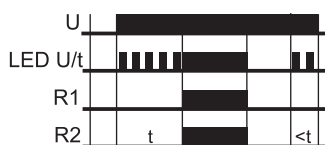
When the supply voltage U (K1 closed) is applied, the instantaneous contact switches into on-position and



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

### E-20 - Delay on

When the supply voltage U (K1 closed) is applied, the set interval t begins (green LED U/t flashes). After the



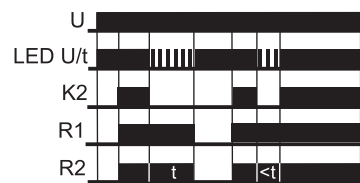
interval t has expired (green LED U/t illuminated) the output relays switch into on-position (yellow LED R

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 is restarted when the supply voltage is next applied.

### A-20 - Delay off

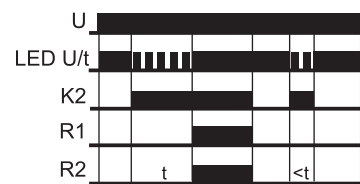
The supply voltage U (K1 closed) must be constantly applied to the device (green LED U/t illuminated).



When the control contact K2 is closed, the output relays switch into on-position (yellow LED R illuminated). If the control contact is opened, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relays switch into off-position (yellow LED R not illuminated). If the control contact is closed again before the interval t has expired, the interval already expired is erased and is restarted with the next cycle.

### E1-20 - Delay on with control contact

The supply voltage U (K1 closed) must be constantly applied to the device (green LED U/t illuminated).



When the control contact K2 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 relays switch into on-position (yellow LED R 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 is restarted with the next cycle.

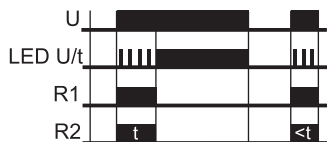
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## Function descriptions

### I1-20 - Wiping on leading edge voltage control

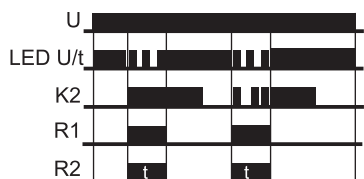
When the supply voltage U (K1 closed) is applied, the output relays switch into on-position (yellow LED R



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 relays switch into off-position (yellow LED R 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 relays switch into off-position. The interval already expired is erased and is restarted when the supply voltage is next applied.

### I2-20 - Wiping on leading edge with control contact

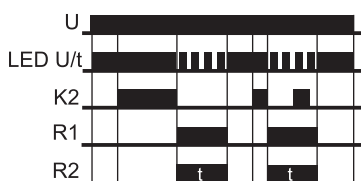
The supply voltage U (K1 closed) must be constantly



applied to the device (green LED U/t illuminated). When the control contact K2 is closed, the output relays switch into on-position (yellow LED R 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 relays switch into off-position (yellow LED R 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.

### W2-20 - Wiping on a trailing edge with control contact

The supply voltage U (K1 closed) must be constantly

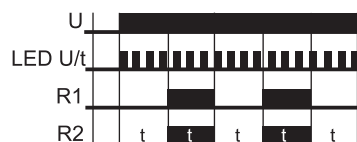


applied to the device (green LED U/t illuminated). Closing the control contact K2 has no influence on the

condition of the output relays. When the control contact is opened, the output relays switch into on-position (yellow LED R 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 relays switch into off-position (yellow LED R 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.

### B2-20 - Cycling timer starting on a pause

When the supply voltage U (K1 closed) is applied, the set interval t begins (green LED U/t flashes). After the



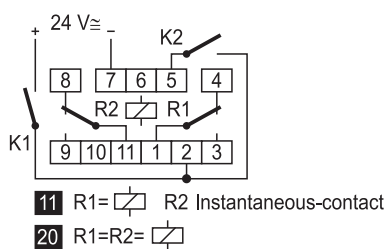
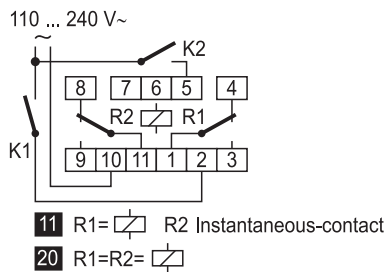
interval t has expired, the output relays switch into on-position (yellow LED R illuminated) and the set interval t begins again. After the interval t has expired, the output relays switch into off-position (yellow LED R not illuminated). The output relays are triggered at a ratio of 1:1 until the supply voltage is interrupted.

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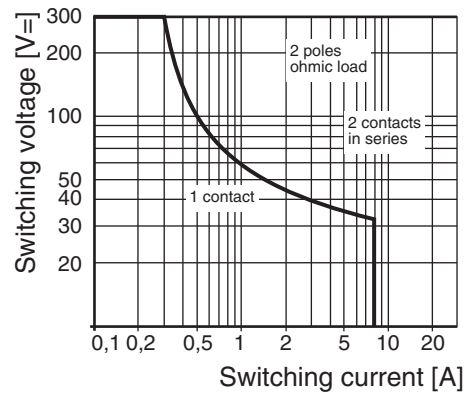
### Connection

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### Load limit curves

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### Dimensions

