

Content

Time delay relays pluggable

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Multifunctional time delay relay

MFT U11S, MFT U21S, MFT U22S, MFT U31S, MFT U21P, MFT U22P, MFT U41SE



MFT U11S, MFT U21S, MFT U22S,
MFT U21P, MFT U22P

- **8 Functions, 8 time ranges**
- **Multivoltage:**
24 Vac / dc
110 ... 240 Vac
12 ... 240 Vdc
24 ... 240 Vac
- **2 output contacts**

Functions

U Multifunctions

- E** Delay on
- A** Delay off
- B2** Cycling timer starting on a pause
- S1** Stop monitoring
- I1** Pulse limitation timer voltage control
- I2** Pulse extension with control contact
- W2** Wiping on trailing edge
- E1** Delay on with control contact

Time end ranges

Multi with 1 or 2 changers

Adjustment range 0,05 s ... 10 days

Multi with immediate contact (MFT U31S)

Adjustment range 0,05 s ... 30 days

Output relay

1 or 2 changers potential free, or 1 changer and 1 immediate contact
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 Vac/dc $\pm 10\%$ and 110 ... 240 Vac -15% +10%
- 12 ... 240 Vdc -15% +10% and 24 ... 240 Vac -30% +10%
- 48 ... 63 Hz, 100% duration of operation, IEC class 1c

Reference data

Selectron® MFT	Article no.
MFT-U11S	41140001
MFT-U21S	41140002
MFT-U22S	41140010
MFT-U31S	41140003
MFT-U21P	41140005
MFT-U22P	41140012
MFT-U41SE	41140004

(Order data see chapter 1)



MFT U31S



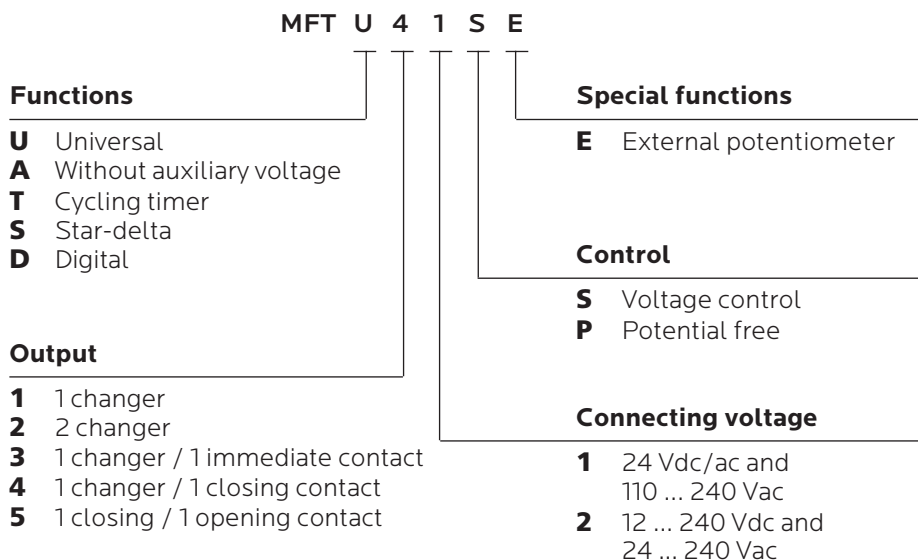
MFT U41SE

Multifunctional time delay relay

MFT U11S, MFT U21S, MFT U22S, MFT U31S, MFT U21P,
MFT U22P, MFT U41SE

Technical data	
Nominal consumption MFT U11S, MFT U21S, MFT U21P, MFT U31S, MFT U41SE	
24 Vac/dc	1,5 VA / 1 W
110 Vac	2 VA / 1 W
240 Vac	11 VA / 1,4 W
MFT U22S, MFT U22P	
24 Vac/dc	1,5 VA / 1 W
110 Vac	4 VA / 1,5 W
230 Vac	6 VA / 2 W
Control contact / Voltage controlled	
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	
Potential free	
Voltage between connections 6 and 7: 10 Vdc < 1 mA	
Accuracy	
Scale limit stops	±0,5%
Repeatability	
of the scale limit at constant conditions	±5 ms or <0,5%
Adjustment accuracy	≤5%
Temperature influence	≤0,01% / °C
Reaction times	
Operating return time K1	max. 60 ms / 30 ms
Reaction time K2	max. 30 ms
Min. pulse/pause time K2	ac >50 ms / dc >20 ms
Recovery time	max. 90 ms

Type key



Multifunctional time delay relay

MFT U11S, MFT U21S, MFT U22S, MFT U31S, MFT U21P, MFT U22P, MFT U41SE

Function descriptions

E - Delay on

Control by U_s via K1. After closing of K1, the adjusted time begins to run. After expiry of this time the output relay



switches to its active state and stays in working mode until K1 is again opened. An interruption of U_s during a time t causes a reset.

A - Delay off

U_s is permanently connected via K1. Control via the control contact K2. After closing of K2 the output relay switches



immediately. If K2 is again opened the adjusted time t starts to run and after expiry of the time t the relay output returns to its initial position. The closing of K2 during the time t causes a time reset and the sequence restarts after a new opening of K2 again at zero.

B2 - Cycling timer starting on a pause

Control by U_s via K1. After closing the K1 the adjusted time t begins to run. After expiry of this time the output relays



switch to their active state and are activated in a 1:1 pulse/pause ratio as long as K1 stays closed.

S1 - Stop monitoring

U_s is permanently connected via K1. Control via the control contact K2. The output relay switches immediately, independen-



dently of K2 and after that the first positive edge of K2 starts the time t . Each additional positive edge of K2 which arrives before the expiry of the time sequence starts the time t again and the output relay stays in active mode. After expiry of the time t the output relay returns in its initial position and the unit is interlocked against all following edges of K2 (memory). The sequence can only be restarted by a new opening and closing again of K1.

I1 - Pulse limitation timer voltage control

Control by U_s via K1. After closing the K1 the output relay switches immediately and the adjusted time t begins to run.



After expiry of the time t the output relay returns to its passive state. An interruption of U_s during the time t causes a reset.

I2 - Pulse extension with control contact

U_s is permanently connected via K1. Control via the control contact K2. After closing the K2 the output relay switches immediately and the adjusted time t starts to run. After



expiry of the time t the output relay returns to its initial position. During this time t , K2 can be actuated as many times as required. Another cycle can only be started if the actual one is terminated.

W2 - Wiping on trailing edge

U_s is permanently connected via K1. Control via the control contact K2. To set the relay in operation mode K2 has to be closed. At the opening of K2 the output relay switches



immediately and the adjusted time t starts to run. After expiry of the time t the output relay returns to its initial position. During the time t K2 can be actuated as many times as required. Another cycle can only be started if the actual one is terminated.

E1 or E - Delay on with control contact

U_s is permanently connected via K1. Control via the control contact K2. After closing (E1) or opening (E) the K2 the



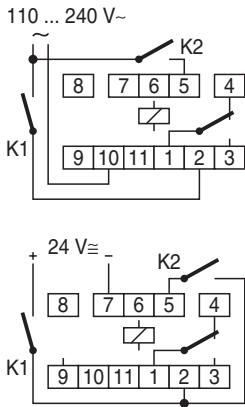
adjusted time t starts to run. After expiry of the time t the output relay switches to operation mode and stays in the position until K2 is opened again.

Multifunction time delay relay

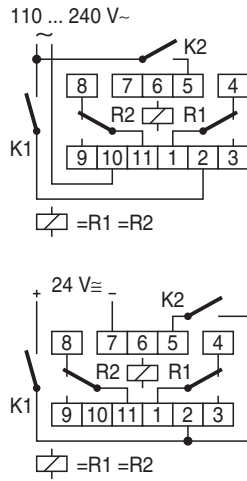
MFT U11S, MFT U21S, MFT U22S, MFT U31S, MFT U21P, MFT U22P, MFT U41SE

Connection

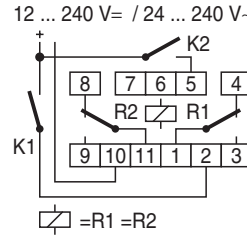
U11S



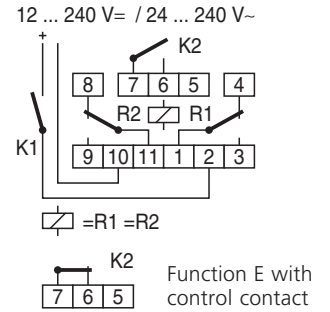
U21S



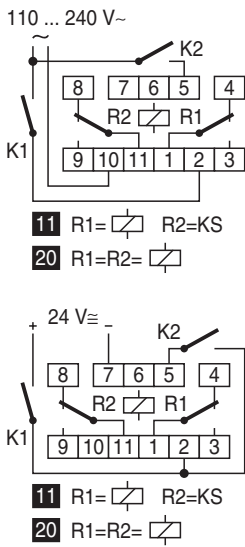
U22S



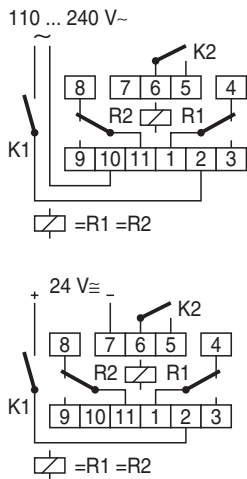
U22P



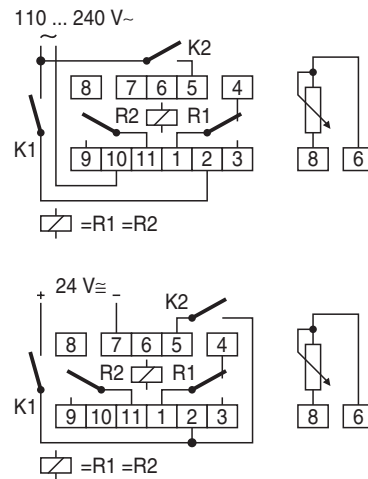
U31S



U21P



U41SE



- 11 R1= R2=KS
- 20 R1=R2= R2

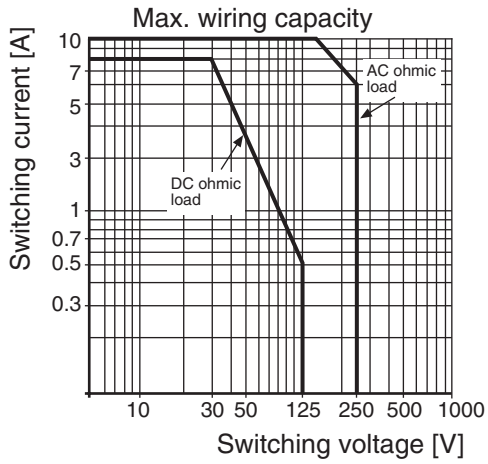
- 11 R1= R2=KS
- 20 R1=R2= R2

Multifunctional time delay relay

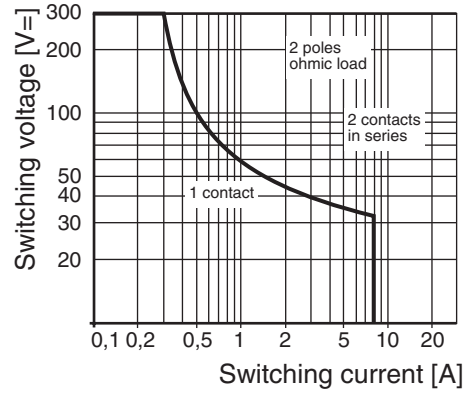
MFT U11S, MFT U21S, MFT U22S, MFT U31S, MFT U21P, MFT U22P, MFT U41SE

Load limit curves

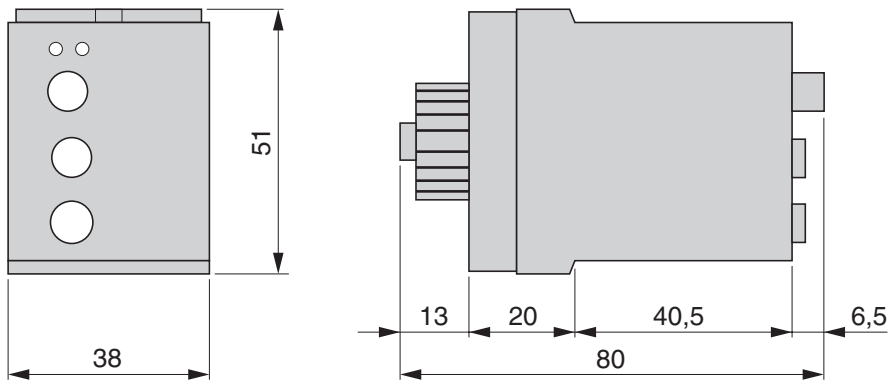
MFT U11S / MFT U21S / MFT U21P /
MFT U22S / MFT U22P / MFT U41SE



MFT U31S



Dimensions



Multifunctional clock-pulse generator relay

MFT T21S, MFT T51SE



MFT T21S

- **5 Function, 8 timer ranges**
- **Multivoltage:**
24 Vac/dc and 110 ... 240 Vac
- **2 Output contacts**

Functions

T Cycling timer

- TI** Cycling timer relay beginning on a pulse
- TP** Cycling timer relay beginning on a pause
- EA** Delay on and delay off
- EI1** Delay on with pulse limitation
- EI2** Delay on with timed pulse

Time end ranges

1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 1 day, 10 days

Output relay

2 changers potential free or 1 closing contact and 1 opening contact
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 Vac/dc $\pm 10\%$ and 110 ... 240 Vac -15% $+10\%$
48 ... 63 Hz, 100% duration of operation, IEC class 1c



MFT T51SE

Reference data

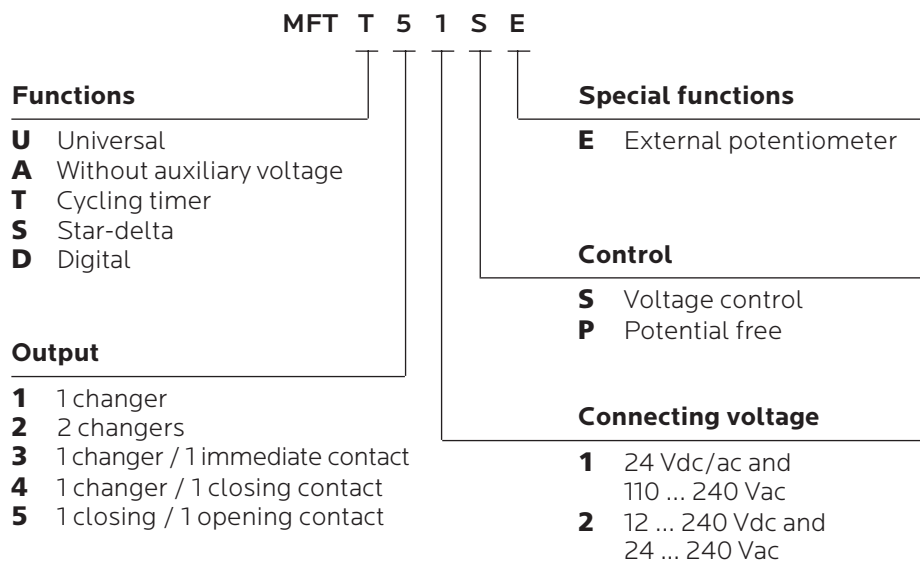
Selectron® MFT	Article no.
MFT T21S	41140006
MFT T51SE	41140007
(Order data see chapter 1)	

Multifunctional clock-pulse generator relay

MFT T21S, MFT T51SE

Technical data	
Nominal consumption	
24 Vac/dc	1,5 VA / 1 W
110 Vac	2 VA / 1 W
240 Vac	11 VA / 1,4 W
Control contact / Voltage controlled	
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 MW (contact K2 open)	
Rest current at parallel load: approx. 2 mA at contact K2 open	
Accuracy	
Scale limit stops	±0,5%
Repeatability	
of the scale limit at constant conditions	±5 ms or <0,5%
Adjustment accuracy	≤5%
Temperature influence	≤0,01% / °C
Reaction times	
Operating/return time K1	max. 60 ms / 30 ms
Reaction time K2	max. 30 ms
Min. pulse/pause time K2	ac >50 ms / dc >20 ms
Recovery time	max. 90 ms

Type key



Multifunctional clock-pulse generator relay

MFT T21S, MFT T51SE

Function descriptions

TI/TP - Cycling timer relay beginning on a pulse / Cycling timer relay beginning on a pause

Control by Us via K1. When K1 is closed the adjusted time t1 or t2 starts to run according to the function set (pulse or



pause starting). The output relay clocks in the adjusted pulse/pause ratio as long K1 stays closed.

EA - Delay on and Delay off

Us is permanently connected via K1. Control via the control contact K2. After closing the K2 the adjusted time t1 starts to



run. After expiry of the time t1 the output relay switches on. At the opening of K2 the adjusted time starts to run and after expiry of the time t2 the output relay returns to its passive status.

EI1 - Delay on with pulse limitation

Control by Us via K1. Bridge between connections 2 and 5. If K1 is closed the adjusted time t1 starts to run. After expiry of



the time t1 the output relay switches on and the adjusted time t2 starts to run. After expiry of the time t2 the output relay returns to its passive status. An interruption of Us during the time t1 or t2 produces a time reset and the cycle restarts from the beginning.

EI2 - Delay on with timed pulse

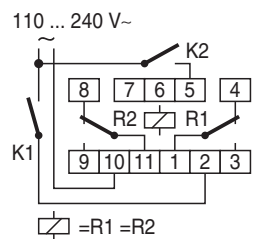
Us is permanently connected via K1. Control via the control contact K2. After closing the K2 the adjusted time t1 starts to



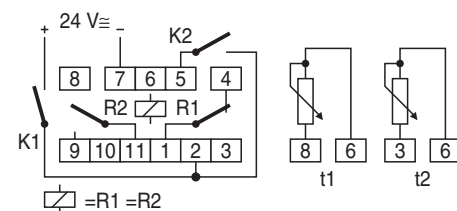
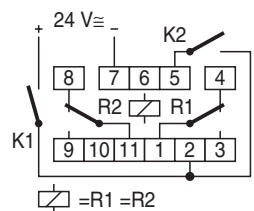
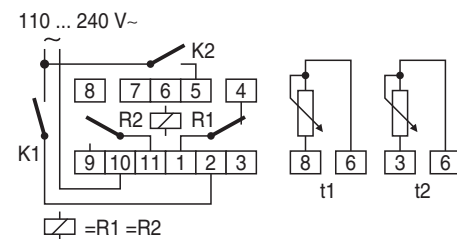
run. After expiry of the time t1 the output relay switches on and the adjusted time t2 starts to run. After expiry of the adjusted time t2 the output relay returns to its passive status. During the time t1 or t2 the contact K2 can be operated at any time. A new cycle can only be started after the actual one is finished.

Connection

MFT T21S



MFT T51SE

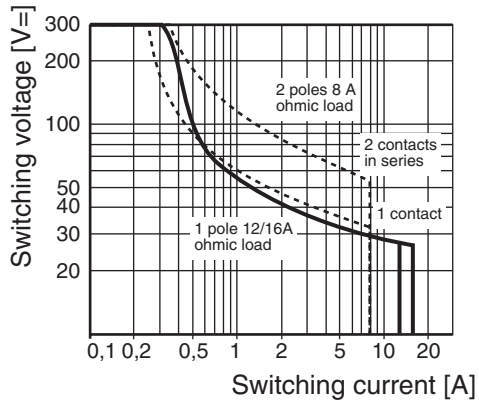


Multifunctional clock-pulse generator relay

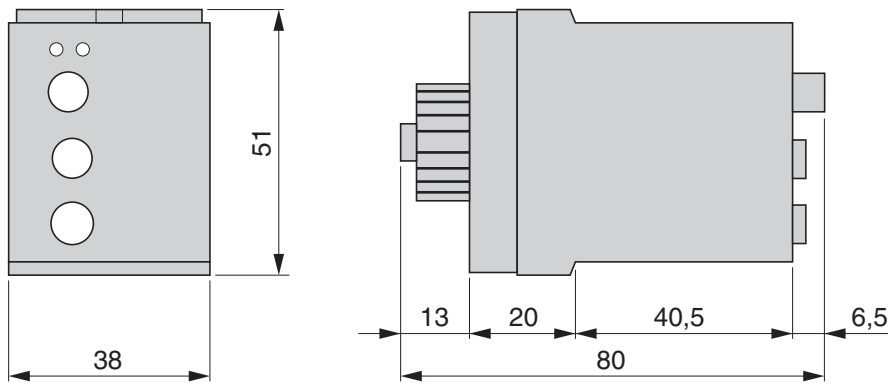
MFT T21S, MFT T51SE

Load limit curve

MFT T21S / MFT T51SE



Dimensions



Delay off without supply voltage

MFT A21S



MFT A21S

- **1 Function, 4 time ranges**
- **Multivoltage:**
24 Vac/dc and 110 ... 240 Vac
- **2 Output contacts**

Functions

A Delay off without supply voltage

A Delay off

Time end ranges

1 s, 10 s, 1 min, 3 min

Output relay

2 changers potential free
250 Vac / 5 A units close together

Indicators

Green LED ON: indication of supply voltage

Connecting voltage

24 Vac/dc $\pm 10\%$ and 110 ... 240 Vac -15% $+10\%$
48 ... 63 Hz, 100% duration of operation, IEC class 1c

Reference data

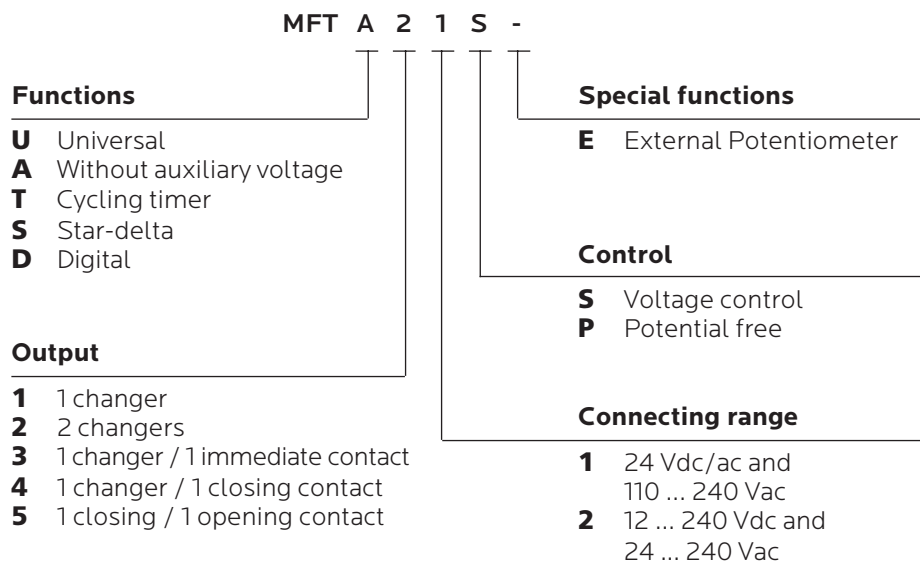
Selectron® MFT	Article no.
MFT-A21S	41140008
(Order data see chapter 1)	

Delay off without supply voltage

MFT A21S

Technical data	
Nominal consumption	
24 Vac/dc	1,5 VA / 1 W
110 Vac	2 VA / 1 W
240 Vac	11 VA / 1,4 W
Accuracy	
Scale limit stops	±0,5%
Repeatability of the scale limit at constant conditions	±5 ms or <0,5%
Adjustment accuracy	≤5%
Temperature influence	≤0,01% / °C
Reaction time	
Operating/return time K1	max. 60 ms / 30 ms
Minimum switch-on time of 110 V ... 140 V	500 ms
Recovery time	2 sec
	max. 90 ms

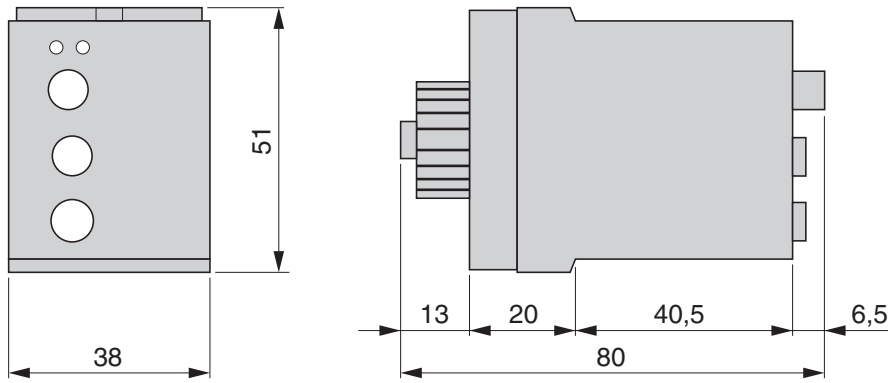
Type key



Delay off without supply voltage

MFT A21S

Dimensions



Star-delta relay

MFT S21S



MFT S21S

- **1 Function, 4 time ranges**
- **Multivoltage:**
24 Vac/dc and 110 ... 240 Vac
- **2 Output controls**

Functions

S Star-delta functions

S Star-delta

Time end ranges

Star times 10 s, 30 s, 1 min, 10 min

Change over time 40 ms, 60 ms, 80 ms, 100 ms

Output relay

2 changers potential free

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

Indicators

Green LED ON: indication of supply voltage
delta-contactor in on-position
(Pins S9-S11)

Green LED flashes: indication of star-time

Yellow LED ON/OFF: indication of star-contactor
(Pins S1-S3)

Connecting voltage

24 Vac/dc $\pm 10\%$ and 110 ... 240 Vac -15% +10%

48 ... 63 Hz, 100% duration of operation, IEC class 1c

Reference data

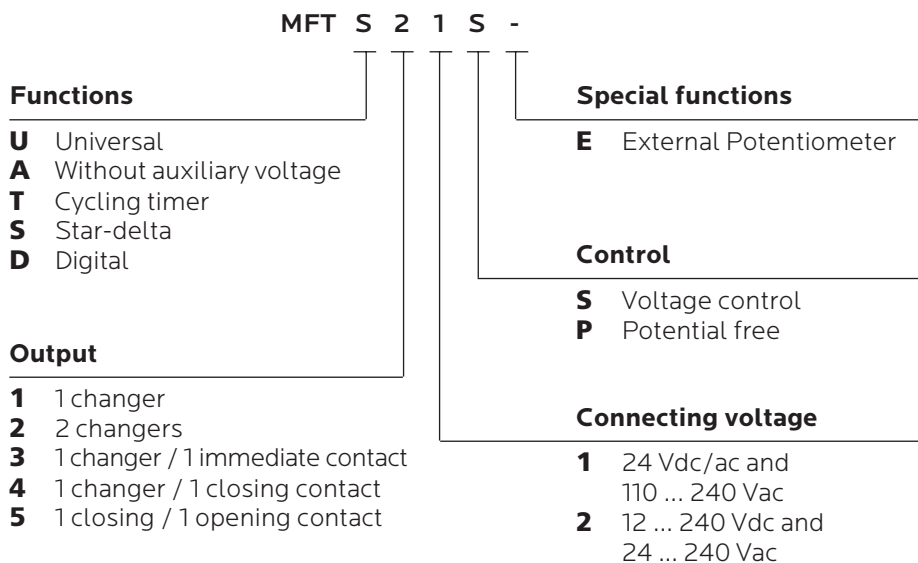
Selectron® MFT	Article no.
MFT S21S	41140009
(Order data see chapter 1)	

Star-delta relay

MFT S21S

Technical data		
Nominal consumption		
24 Vac/dc		1,5 VA / 1 W
110 Vac		2 VA / 1 W
240 Vac		11 VA / 1,4 W
Accuracy		
Scale limit stops		±0,5%
Repeatability of the scale limit		
at constant conditions		±5 ms or <0,5%
Adjustment accuracy		≤5%
Temperature influence		≤0,01% / °C
Reaction time		
Operating/return time K1		max. 60 ms / 30 ms
Reaction time K2		max. 30 ms
Min. pulse/pause time K2		ac >50 ms /
		dc >20 ms
Recovery time		max. 90 ms

Type key



Star-delta relay

MFT S21S

Function descriptions

S - Star-delta

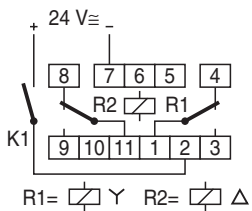
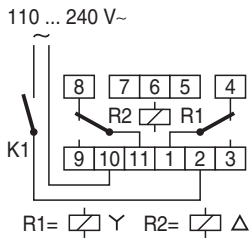
Control by U_s via K1. After closing the K1 the star output relay switches on. After expiry of the adjusted time t_{star} the star output relay returns back to its passive status and the



adjusted time t_{-Y} starts to run. After expiry of the time t_{-U} the delta output relay switches on. An interruption of U_s produces a time reset and the cycle restarts from the beginning.

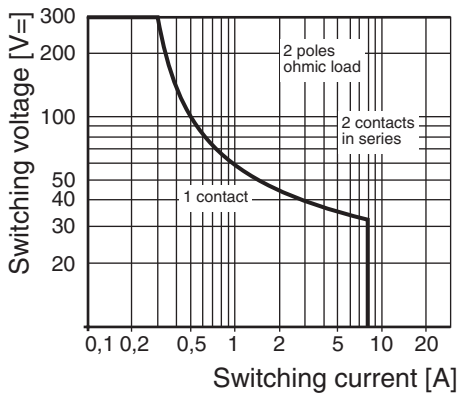
Connection

S21S



Load limit curve

MFT S21S



Star-delta relay

MFT-S21S

Dimensions

