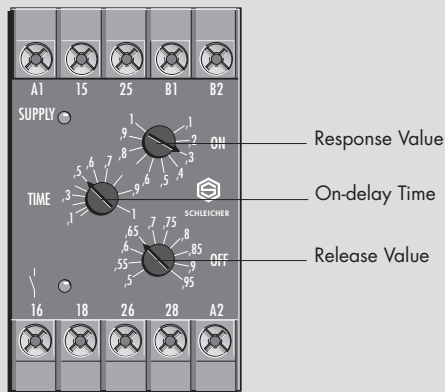




Voltage or Current Relays

For Limit Value Overflow
Response Value Adjustable in Ratio 1 : 10
Return Value Adjustable from 50 to 95 % of the Response
Delay Time Adjustable
With AC External Supply

SXT 52 SXT 72



For Example

- ▶ With time delay, to prevent triggering of system in the event of transient current or voltage changes.
- ▶ Monitoring of field excitation at motors
- ▶ Monitoring of interference voltage in networks with external power feed
- ▶ Monitoring of over voltage levels
- ▶ Monitoring of over current levels

Function

The device is connected to a permanent 50/60 Hz supply voltage. The voltage or current to be monitored is supplied to the device via terminals B1/B2. The supply voltage circuit and the measuring circuit are electrically isolated by means of a transformer.

A return value and a response value are adjusted on the relay. If the monitored measurement value exceeds the pre-selected response value, the relay switches. If the measurement value falls below the pre-selected return value, the relay returns to its initial position. The return value is always less than the response value, and is adjustable in the ratio 0,5 to 0,95 times of the response value.

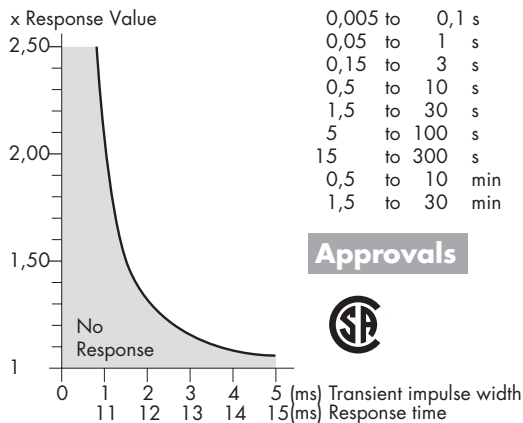
SXT 52 – Open Circuit Principle

Following application of the supply voltage the relay SXT 52 remains in its off position; it switches to the operating position only when the response value has been exceeded and the pre-selected on-delay time has elapsed. When the measured value falls below the release value. The relay returns to its off position.

SXT 72 – Closed Circuit Principle

Following application of the supply voltage, the relay SXT 72 switches immediately to the operating position. If the response value is exceeded and the pre-selected on-delay time has elapsed, the relay returns to the its off position. The relay returns to the operating position only if the measured value again falls below the release value.

Response Time



Time Ranges t

- 0,005 to 0,1 s
- 0,05 to 1 s
- 0,15 to 3 s
- 0,5 to 10 s
- 1,5 to 30 s
- 5 to 100 s
- 15 to 300 s
- 0,5 to 10 min
- 1,5 to 30 min

Approvals

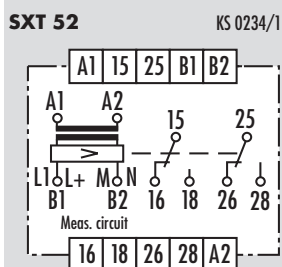


Setting Example:

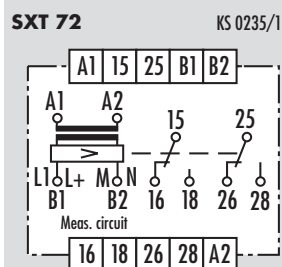
Meas. Range-End value x Ratio
 Factor = *Response Value (ON)*
 e.g. 10 A AC x 0,75 = 7,5 A AC
 Response Value x Ratio Factor =
Release Value (OFF)
 e.g. 7,5 A AC x 0,85 = 6,4 A AC
 Hysteresis:
 7,5 A AC – 6,4 A AC = 1,1 A AC

The response time is the time interval between the occurrence of a measured value and change-over of the relay. It is affected by the factor by which the measured value exceeds the response value. The permissible transient pulse width is the value of a disturbance at the measurement input for which no relay response is triggered.

Connection Diagram



Connection Diagram



Meas. ranges U/I

Measuring range	Internal resistance	Rated frequency Hz	Half wave rectification	Permissible over current continuous	voltage max 3 s with 100 s pause to next overload
2 to 20 mA AC	10 Ω	50-60	yes	0,05 A AC	0,2 A AC
0,01 to 0,1 A AC	2 Ω	50-60	yes	0,25 A AC	1 A AC
0,05 to 0,5 A AC	400 mΩ	50-60	yes	1,25 A AC	5 A AC
0,1 to 1 A AC	200 mΩ	50-60	yes	2,5 A AC	10 A AC
0,5 to 5 A AC	10 mΩ	50-60	yes	12,5 A AC	50 A AC
1 to 10 A AC	5 mΩ	50-60	yes	17,5 A AC	50 A AC
0,5 to 5 V AC	125 Ω	50-60	yes	12,5 V AC	–
2,5 to 25 V AC	6,25 kΩ	50-60	yes	62,5 V AC	–
5 to 50 V AC	12,5 kΩ	50-60	yes	125 V AC	–
25 to 250 V AC	625 kΩ	50-60	yes	625 V AC*	–
2 to 20 mA DC	10 Ω	–	yes	0,05 A DC	0,2 A DC
0,01 to 0,1 A DC	2 Ω	–	yes	0,25 A DC	1 A DC
0,05 to 0,5 A DC	400 mΩ	–	yes	1,25 A DC	5 A DC
0,1 to 1 A DC	200 mΩ	–	yes	2,5 A DC	10 A DC
0,5 to 5 A DC	10 mΩ	–	yes	12,5 A DC	50 A DC
1 to 10 A DC	5 mΩ	–	yes	17,5 A DC	50 A DC
0,5 to 5 V DC	125 Ω	–	yes	12,5 V DC	–
2,5 to 25 V DC	6,25 kΩ	–	yes	62,5 V DC	–
5 to 50 V DC	12,5 kΩ	–	yes	125 V DC	–
25 to 250 V DC	625 kΩ	–	yes	625 V DC*	–

*Note insulation category

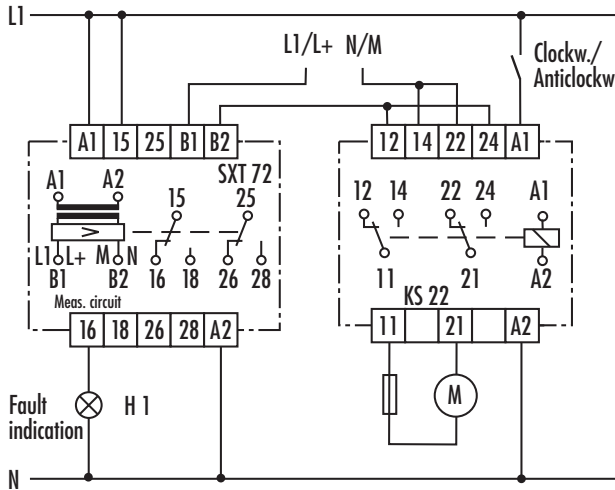


SXT 52 **SXT 72**

Application Example

A 1026

Monitoring of the Field Excitation of Motors

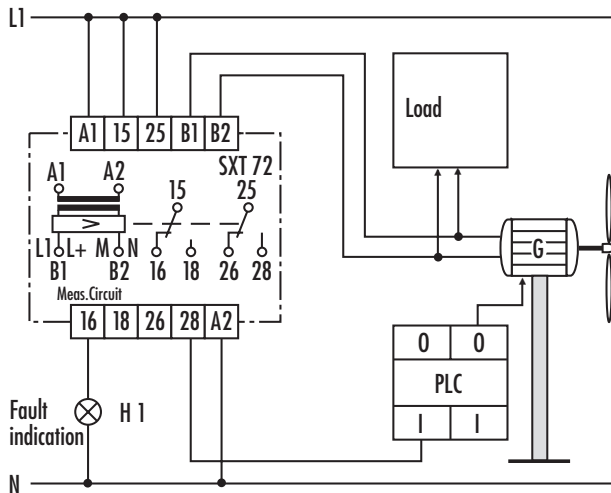


In this example, the field excitation of the motor is monitored. The motor current is measured by the current measuring relay SXT 72. For this the measuring circuit B1/B2 must be in parallel with the motor. If the current rises above the adjusted set value, the measuring relay falls back into its off position after the preselected on-delay time has elapsed. With a coupling relay KS 22, the direction of rotation of the motor can be reversed.

Application Example

A 1027

Monitoring of a Generator Voltage

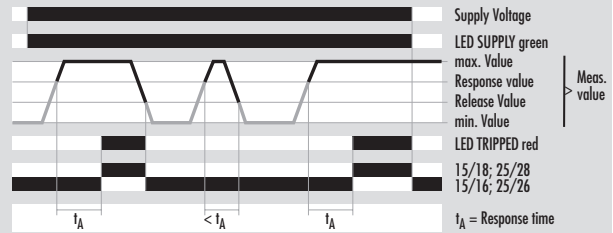


The generator voltage is measured by the voltage measuring relay SXT 72. If the voltage rises above the response value, the relay switches back into its off-position, after the pre-selected on-delay time has elapsed. The contact 25/28 opens and the contact 15/16 closes. A fault signal goes to the PLC and the lamp H1 lights up. The voltage can be adjusted through the PLC.

Function Diagram

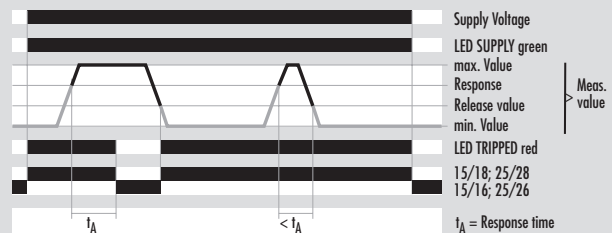
SXT 52

FD 0077 W1



SXT 72

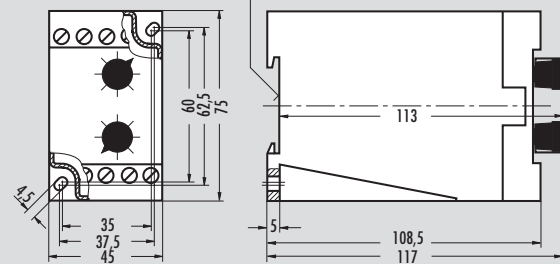
FD 0078 W1



Dimension Diagram

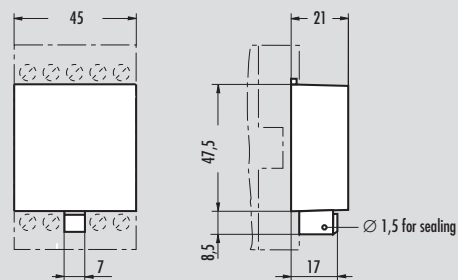
for DIN-Rail acc.to EN 50022

S 3-4



Accessory

Cover Z 29



Notes

- ▶ Unfiltered or partially filtered DC voltages and currents can also be monitored by the measuring circuit. It should be noted that the relay responds to the positive peak value, but is adjusted to the corresponding r.m.s. value at 50 Hz.
- ▶ Negative currents are not measured but also not influenced (same working range as for the positive currents).
- ▶ Other internal resistances upon request.

Order Example

SXT 52	1,5 - 30 s	1 - 10 A AC 50 Hz	220 - 240 V AC
Type	On-delay time	Measuring Range	Rated Voltage

2



TECHNICAL DATA

FUNCTION According to DIN EN DIN EN 60255-6:11.94

Function Display
Function Diagram

POWER SUPPLY DATA

Rated Voltage U_N	V AC
Rated Consumption at 50Hz and U_n (AC)	VA
Rated Consumption at 50Hz and U_n (AC)	W
Rated Frequency	Hz
Operating Voltage Range	
Parallel Permitted Loads	

MEASURING RANGE

Setting Mode	
Setting Ranges	
Number	
Measuring Circuit Response Value	
Measuring Circuit Release Value	
Selectable ON-Delay Time	
Dispersion	%
Influence of Supply Voltage	%/% ΔU_n
Influence of Ambient Temperature	%/K ΔT

TIME CIRCUIT

Average Value of the Error	
Dispersion	% \pm 10 ms
Influence of Supply Voltage	%/% ΔU_n
Influence of Ambient Temperature	%/K ΔT

OUTPUT CIRCUIT

Contact Equipment	
Contact Material	
Switching Voltage U_n	V AC/DC
Maximum Rated Current I_n per Contact	A
Application Category acc. to EN 60947-5-1:1991	
Short Circuit Protection Max. Fuse Element Class gG	A
Permissible Switching Frequency Switching Cycles/h	
Mechanical Lifetime	Switching Cycles
Response Time t_{Δ}	ms
Release Time t_R	ms

GENERAL DATA

Creepage and Clearance Distances Between Circuits	
According to DIN VDE 0110-1:04.97: Rated Withstand Voltage	kV
Over Voltage Category	
Contamination Level	
Design Voltage	V
Test Voltage U_{eff} 50 Hz acc. to DIN VDE 0110-1, Table A.1	kV
Protection Class Housing/Terminals acc. to DIN VDE 0470 Sec. 1:11.92	
Radiated Noise	
Noise Immunity	

Ambient Temperature, Working Range	$^{\circ}C$
Dimension Diagram	
Connection Diagram	
Weight	kg
Accessories	
Approvals	

GENERAL TECHNICAL SPECIFICATIONS

SXT 52

Measuring Relay
with Supply Voltage and
Adjustable Off-Delay Time
Open-Circuit Principle
1 LED green, 1 LED red
FD 0077 W1

24	42	110	220
		-127	-240
2,5	2,5	2,5	2,5
2,1	2,1	2,1	2,1
50 to 60			
0,8 to 1,1 x U_N			
Yes			

Analog
1
See Table Page 2.8
0,5 to 0,95 x Response Value
See Table Page 2.8
$\leq \pm 0,5$
$\leq 0,05$
$\leq 0,1$

See Diagram 4 Page i.11
$\leq \pm 0,5$
$\leq 0,02$
$\leq 0,025$

2 Changeover
Ag - Alloy; Gold - Plated
230/230
≤ 5
AC-15: U_e 230 V AC, I_e 3 A
DC-13: U_e 24 V DC, I_e 2 A
6
6000
30×10^6
See Diagram Page 2.5
30

4
III
3 Outside, 2 Inside
250
2,2
IP 30/IP 20
EN 50081-1:03.93, -2:03.94
EN 50082-2:1995

-20 to + 60
S 3 - 4
KS 0234/1
0,24
Cover Z 29
CSA

Page i.11

SXT 72

Measuring Relay
with Supply Voltage and
Adjustable Off-Delay Time
Closed-Circuit Principle
1 LED green,, 1 LED red
FD 0078 W1

24	42	110	220
		-127	-240
2,5	2,5	2,5	2,5
2,1	2,1	2,1	2,1
50 to 60			
0,8 to 1,1 x U_N			
Yes			

Analog
1
See Table Page 2.8
0,5 to 0,95 x Response Value
See Table Page 2.8
$\leq \pm 0,5$
$\leq 0,05$
$\leq 0,1$

See Diagram 4 Page i.11
$\leq \pm 0,5$
$\leq 0,02$
$\leq 0,025$

2 Changeover
Ag - Alloy; Gold - Plated
230/230
≤ 5
AC-15: U_e 230 V AC, I_e 3 A
DC-13: U_e 24 V DC, I_e 2 A
6
6000
30×10^6
See Diagram Page 2.5
30

4
III
3 Outside, 2 Inside
250
2,2
IP 30/IP 20
EN 50081-1:03.93, -2:03.94
EN 50082-2:1995

-20 to + 60
S 3 - 4
KS 0235/1
0,24
Cover Z 29
CSA

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