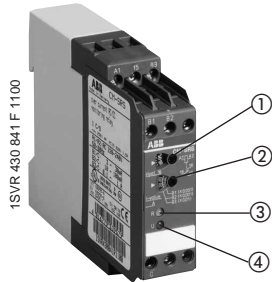


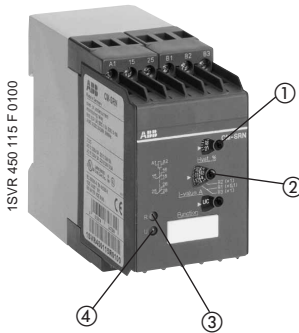
# Current monitor, single phase AC/DC CM-SRS, CM-SRN

## Ordering details

Measuring and monitoring relays



**CM-SRS**



**CM-SRN**

- ① Hysteresis adjustment
- ② Threshold value adjustment
- ③ Yellow LED - relay
- ④ Green LED - supply voltage

- Monitors AC or DC currents  
CM-SRS: 3 ranges  
3mA-1A  
CM-SRN: 6 ranges  
3mA-15A
- 3 measuring ranges covered by unit
- Switching hysteresis adjustable from 5-30%
- CM-SRS: 1c/o  
CM-SRN: 2c/o
- 2 LEDs to indicate operational status
- 3 supply voltage versions,
- Version 24-240VAC/DC with convertible undercurrent/overcurrent monitoring
- Approvals



Remark: 1c/o = SPDT; 2c/o = DPDT

The current being monitored is applied to the terminals B1 or B2 or B3 and C. The output relay energizes when the monitored current exceeds the set point. It de-energizes when the current is below the set point within the hysteresis range.

Both current monitors are used to monitor overcurrents, the CM-SRN type in AC/DC supply version has a selection switch to select over or undercurrent function.

Hysteresis is adjustable from 5-30 % related to the response value. Measuring, output and supply circuits are electrically isolated to prevent interference. As one measuring cycle takes only 80 ms, changes in current can quickly be detected.

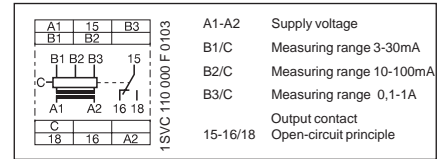
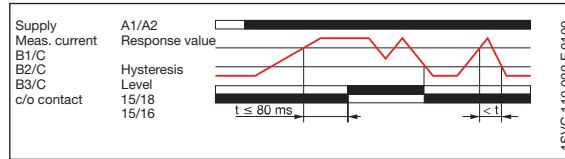
**CM-SRS:** Supply voltage must be applied at least 50ms before applying measuring current.

**CM-SRN:** Could be ordered with or without delay time. Delay on "ON" is adjustable from 0.05 to 1 second or 1.5 to 30 seconds, thus ensuring accuracy.

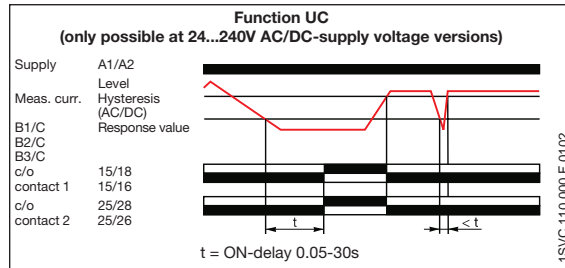
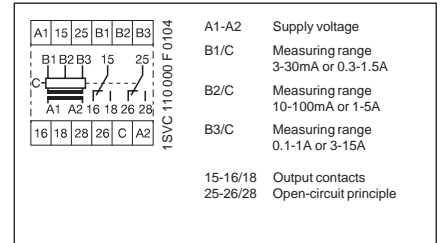
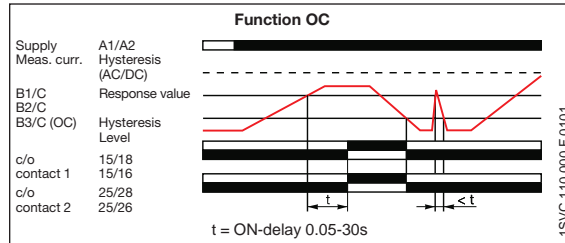
**CM-SRS:** Width 22.5 mm, output contact 1c/o

**CM-SRN:** Width 45 mm, output contact 2c/o

### CM-SRS: 1 Function



### CM-SRN: 2 Functions



Type	Supply voltage 50/60Hz	Order code	Pack. unit piece	Price 1 piece	Weight 1 piece kg/lb
<b>CM-SRS</b>	24VAC	1SVR 430 841 R 9100	1		0.150/0.33
	110-130VAC	1SVR 430 841 R 0100	1		0.150/0.33
	220-240VAC	1SVR 430 841 R 1100	1		0.150/0.33

Measuring ranges: 3-30mA; 10-100mA; 0.1-1A, no time delay

<b>CM-SRN</b>	24-240VAC/DC	1SVR 450 115 R 0000	1		0.300/0.66
	110-130VAC	1SVR 450 110 R 0000	1		0.300/0.66
	220-240VAC	1SVR 450 111 R 0000	1		0.300/0.66

Measuring ranges: 0.3-1.5A; 1-5A; 3-15A, no time delay

<b>CM-SRN</b>	24-240VAC/DC	1SVR 450 115 R 0100	1		0.300/0.66
	110-130VAC	1SVR 450 110 R 0100	1		0.300/0.66
	220-240VAC	1SVR 450 111 R 0100	1		0.300/0.66

Measuring ranges: 3-30mA; 10-100mA; 0.1-1A, with ON-delay

<b>CM-SRN</b>	24-240VAC/DC	1SVR 450 125 R 0000	1		0.300/0.66
	110-130VAC	1SVR 450 120 R 0000	1		0.300/0.66
	220-240VAC	1SVR 450 121 R 0000	1		0.300/0.66

Measuring ranges: 0.3-1.5A; 1-5A; 3-15A, with ON-delay

<b>CM-SRN</b>	24-240VAC/DC	1SVR 450 125 R 0100	1		0.300/0.66
	110-130VAC	1SVR 450 120 R 0100	1		0.300/0.66
	220-240VAC	1SVR 450 121 R 0100	1		0.300/0.66

• Technical Data .....	38	• Accessories current transformer .....	40
• Dimensional drawings .....	95	• Accessories .....	95

# Current and voltage monitors, single phase

## Technical data, standards / directives

Measuring and monitoring relays

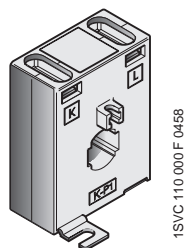
	CM-SRS			CM-SRN					
<b>Supply circuit</b>									
Supply voltage - power consumption	A1-A2 24VAC 50/60Hz approx. 1VA			24-240VAC/DC ca. 2VA / approx. 2W					
	110-130VAC 50/60Hz approx. 1VA			110-130VAC 50/60Hz approx. 2VA					
				220-240VAC 50/60Hz approx. 2VA					
Tolerance of supply voltage	-15%...+10%								
Supply voltage frequency	50-60Hz			50-60Hz, 0-400 Hz (A1-A2 = 24-240VAC/DC)					
Duty time	100%								
<b>Measuring circuit</b>									
	B1-C	B2-C	B3-C	B1-C	B2-C	B3-C	B1-C	B2-C	B3-C
Function	overcurrent			over- or undercurrent					
Measuring range, threshold value min-max.	3-30mA	10-100mA	0,1-1A	3-30mA	10-100mA	0,1-1A	0,3-1,5A	1-5A	3-15A
Input resistance	33Ω	10Ω	1Ω	33Ω	10Ω	1Ω	0,06Ω	0,018Ω	0,006Ω
Pulse overload t < 1s	300mA	1A	10A	300mA	1A	10A	15A	50A	100A
Possible permanent overload	50mA	150mA	1,5A	50mA	150mA	1,5A	2A	7A	20A
Hysteresis related to adjusted value	5-30%, adjustable								
Max. voltage within measuring circuit									
Frequency of measuring circuit	DC, 50-60Hz								
Measuring cycle time max.	80ms								
Measuring error within the tolerance of supply power	≤ 0,5%								
Measuring error within temperature range	≤ 0,06 % / °C								
<b>Timing circuit</b>									
	without			delay of the over-, undercurrent message					
Delay on operate	-			0,05-1s, 1,5-30s, adjustable					
Timing error within the tolerance of supply power	-			≤ 0,5%					
Timing error within temperature range	-			≤ 0,06 % / °C					
<b>Display of operational status</b>									
Supply voltage	Green LED								
Output relay energized	Yellow LED								
Oversvoltage									
Undersvoltage									
Phase loss									
<b>Output circuits</b>									
	15-16/18			15-16/18, 25-26/28					
No. of contacts	1c/o			2c/o					
Operating principle <sup>1)</sup>	open-circuit principle								
Contact material	AgCdo								
Rated voltage acc. to VDE0110, IEC947-1	250V			400 V					
Min. switching voltage									
Max. switching voltage	250VAC, 250VDC			400VAC, 400VDC					
Min. switching current									
Rated switching current acc. to									
IEC941-x AC12 (resistive) 230V	4A			5A					
IEC941-x AC15 (inductive) 230V	3A			3A					
IEC941-x DC12 (resistive) 24V	4A			5A					
IEC941-x DC13 (inductive) 24V	2A			2,5A					
Maximum mechanical life	30 x 10 <sup>6</sup>								
Maximum electrical life (to AC12, 230V, 4A)	0,1 x 10 <sup>6</sup>								
Short circuit proof, max. fuse rating	n/c contact	10A, fast operating class gL			5A, fast operating class gL				
	n/o contact	10A, fast operating class gL			5A, fast operating class gL				
<b>General Data</b>									
Width of enclosure	22,5mm			45mm					
Wire size	2 x 2,5mm <sup>2</sup> (2x14 AWG) stranded with wire end ferrule								
Mounting position	any								
Degree of protection enclosure / terminals	IP50 / IP20								
Operating temperature	-20°C...+60°C			-25°C...+65°C					
Storage temperature	-40°C...+85°C								
Mounting	DIN rail (EN50022)								
Mechanical shock resistance acc to IEC68-2...6	6G			10G					
<b>Standards / directives</b>									
Product standards									
Electromagnetic compatibility									
ESD acc. to IEC1000-4-2, EN61000-4-2									
HF radiation resistance acc. to IEC1000-4-3, EN61000-4-3									
Burst acc. to IEC1000-4-4, EN61000-4-4									
Surge acc. to IEC1000-4-5, EN61000-4-5									
HF line emission acc. to IEC1000-4-6, EN61000-4-6									
Low voltage directive									
Resistance to vibration									
<b>Approvals</b> cULus, GL, GOST									
<b>Isolation data</b>									
Rated voltage acc. to VDE0110, IEC947-1	250V			400V					
between supply-, monitoring- and output circuit									
Rated impulse withstand voltage to VDE0110, IEC664 -between all isolated circuits	4kV / 1,2 - 50µs								
Test voltage between all isolated circuits	2,5kV, 50Hz, 1min.								
Pollution category acc. to VDE0110, IEC664 / IEC255-5	III / C								
Oversvoltage category acc. to VDE0110, IEC664 / IEC255-5	III / C								
Environmental tests acc. to IEC68-2...30	24h cycle, 55°C, 93% rel., 96h								

<sup>1)</sup> Opened circuit principle: Output relay energizes when the adjusted threshold value is exceeded or dropped below by the measured value  
 Closed circuit principle: Output relay de-energizes when the adjusted threshold value is exceeded or dropped below by the measured value  
 Remark: 1c/o = SPDT; 2c/o = DPDT

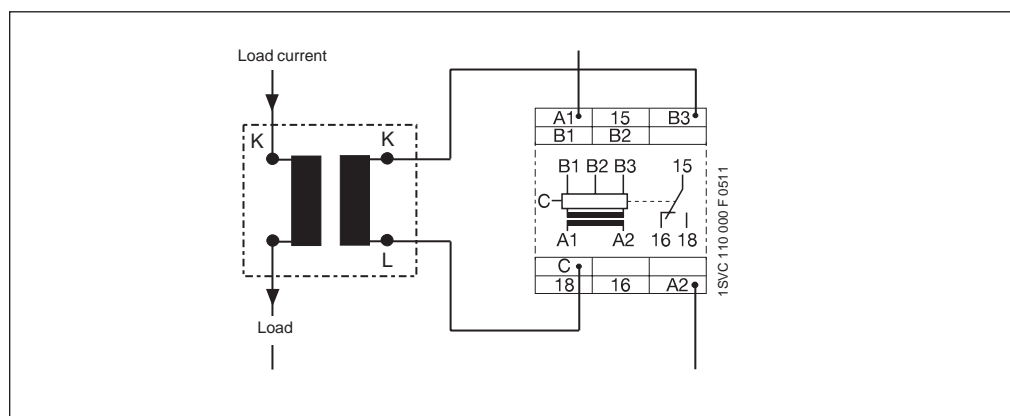
# Current monitors accessories CM-CT, current transformers

## Selection and ordering details

Measuring and monitoring relays



### Operating principle / wiring diagram



### Secondary current 1A

Type	Nominal/ primary current	Class	Order code	Pack. unit piece	Price 1 piece
	50A	2VA/1	<b>E4 450 116 10</b>	1	
	75A	2.5 VA/1	<b>E4 450 116 11</b>	1	
	100A	2.5 VA/1	<b>E4 450 116 12</b>	1	
	150A	2.5 VA/1	<b>E4 450 116 13</b>	1	
	200A	2.5 VA/1	<b>E4 450 116 14</b>	1	
	200A	5 VA/1	<b>E4 450 117 10</b>	1	
	300A	5 VA/1	<b>E4 450 117 11</b>	1	
	400A	5 VA/1	<b>E4 450 117 12</b>	1	
	500A	5 VA/1	<b>E4 450 117 13</b>	1	
	600A	5 VA/1	<b>E4 450 117 14</b>	1	

### Secondary current 5A

Type	Nominal/ primary current	Class	Order code	Pack. unit piece	Price 1 piece
	50A	2VA/1	<b>E4 450 116 50</b>	1	
	75A	2.5 VA/1	<b>E4 450 116 51</b>	1	
	100A	2.5 VA/1	<b>E4 450 116 52</b>	1	
	150A	5 VA/1	<b>E4 450 116 53</b>	1	
	200A	5 VA/1	<b>E4 450 116 54</b>	1	
	200A	5 VA/1	<b>E4 450 117 50</b>	1	
	300A	5 VA/1	<b>E4 450 117 51</b>	1	
	400A	5 VA/1	<b>E4 450 117 52</b>	1	
	500A	5 VA/1	<b>E4 450 117 53</b>	1	
	600A	5 VA/1	<b>E4 450 117 54</b>	1	