



# Electronic Products and Relays Selection Table Measuring and Monitoring Relays CM-Range

# Measuring and Monitoring Relays

## Single Phase Current and Voltage Monitors

Type	Order number
CM-SRS.11	1SVR 430 840 R0200
CM-SRS.11	1SVR 430 841 R0200
CM-SRS.11	1SVR 430 841 R1200
CM-SRS.12	1SVR 430 840 R0300
CM-SRS.12	1SVR 430 841 R0300
CM-SRS.12	1SVR 430 841 R1300
CM-SRS.21	1SVR 430 840 R0400
CM-SRS.21	1SVR 430 841 R0400
CM-SRS.21	1SVR 430 841 R1400
CM-SRS.22	1SVR 430 840 R0500
CM-SRS.22	1SVR 430 841 R0500
CM-SRS.22	1SVR 430 841 R1500
CM-SRS.M1	1SVR 430 840 R0600
CM-SRS.M2	1SVR 430 840 R0700
CM-SFS.21	1SVR 430 760 R0400
CM-SFS.22	1SVR 430 760 R0500
CM-ESS.1	1SVR 430 830 R0300
CM-ESS.1	1SVR 430 831 R0300
CM-ESS.1	1SVR 430 831 R1300
CM-ESS.2	1SVR 430 830 R0400
CM-ESS.2	1SVR 430 831 R0400
CM-ESS.2	1SVR 430 831 R1400
CM-ESS.M	1SVR 430 830 R0500
CM-EFS.2	1SVR 430 750 R0400

### Rated control supply voltage $U_c$

24 - 240 V AC/DC	■				■				■				■		■			■		■		■
110 - 130 V AC		■				■				■									■			
220 - 240 V AC			■						■											■		

### Measuring ranges AC/DC

3 - 30 mA	■	■	■																			
10 - 100 mA	■	■	■																			
0.1 - 1 A	■	■	■																			
0.3 - 1.5 A				■	■	■																
1 - 5 A				■	■	■																
3 - 15 A				■	■	■																
3 - 30 V																			■	■	■	■
6 - 60 V																			■	■	■	■
30 - 300 V																			■	■	■	■
60 - 600 V																			■	■	■	■

### Monitoring function

Over- or undercurrent	■	■	■	■	■	■	■	■	■	■	■	■	■	■								
Windows current monitoring																			■	■		
Over- or undervoltage																			■	■	■	■
Windows voltage monitoring																						■

### Features

Latching																							sel	sel	
Open circuit or closed circuit principle																								sel	sel

### Timing functions for tripping delay

ON delay, 0 or 0,1 - 30 s							adj	adj	adj	adj	adj	adj	adj											adj	adj	adj	adj
ON or OFF delay																										sel	sel

### Output

c/o contact	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	2	2	2	2	2
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# Measuring and Monitoring Relays

## Insulation Monitoring Relays

Type	Order number
CM-IWS.2	1SVR 630 670R0200
CM-IWS.1	1SVR630 660 R0100
CM-IWN.1	1SVR650 660 R0200
CM-IVN	1SVR650 669 R9400

Rated control supply voltage $U_s$	
24 - 240 VAC/DC	■ ■ ■

Measuring voltages	
250 V AC (L-PE)	■
400 V AC (L-PE)	■ ■
690 V AC	■
300 V DC (L-PE)	■
600 V DC (L-PE)	■
1000 V DC	■

Measuring range	
1 - 100 k $\Omega$	■ ■ ■
2 - 200 k $\Omega$	■

Output contacts	
1 c/o	■ ■
1 x 2 c/o or 2 x 1 c/o	■

Working principle	
open circuit principle	■ ■
open or closed principle adjustable	■

Test	
Front face button or control input	■ ■ ■

Reset	
Front face button or control input	■ ■ ■
Fault storage / latching configurable	■ ■ ■
Non voltage storage configurable	■
Interrupted wire detection	fix sel
Threshold values configurable	1 1 2

Coupling unit

Yes  
CM-IWN.1

## Motor Protection Monitoring Relays

## Motor Load Monitors

Type	Order number
CM-LWN	1SVR 450 335 R0000
CM-LWN	1SVR 450 330 R0000
CM-LWN	1SVR 450 331 R0000
CM-LWN	1SVR 450 332 R0000
CM-LWN	1SVR 450 334 R0000
CM-LWN	1SVR 450 335 R0100
CM-LWN	1SVR 450 330 R0100
CM-LWN	1SVR 450 331 R0100
CM-LWN	1SVR 450 332 R0100
CM-LWN	1SVR 450 334 R0100

Rated control supply voltage $U_s$	
24-240 V AC/DC	■
110 - 130 V AC	■
220 - 240 V AC	■
380 - 440 V AC	■
480 - 500 V AC	■

Voltage range (Phase to phase)	
110 - 500 V	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Current range	
0.5 - 5 A	■ ■ ■ ■ ■
2 - 20 A	■ ■ ■ ■ ■

Frequency range	
50/60 Hz	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
DC or 15 - 400 Hz	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

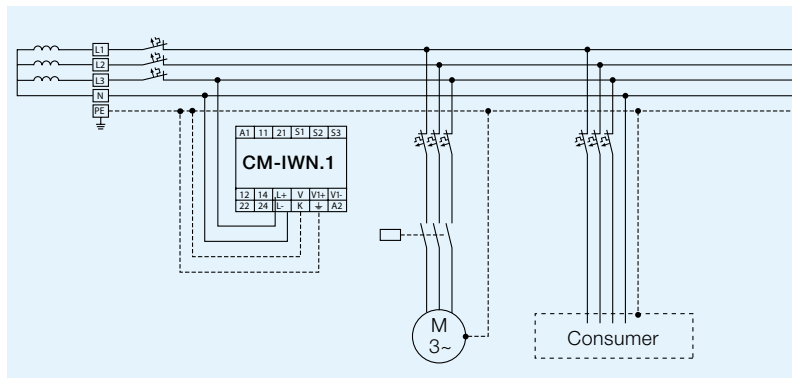
Suitable for monitoring	
Single-phase mains	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Three-phase mains	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Monitoring function	
Motor load // cos Phi	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Timing functions	
Start up delay (on delay)	adj adj adj adj adj adj adj adj adj adj
Response delay	adj adj adj adj adj adj adj adj adj adj

Output contacts	
2 x 1 c/o	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

### Insulation monitors for unearthed supply systems (IT-Systems)



# Motor Protection Monitoring Relays

## Thermistor Relays

Type	Order number
CM-MSE	1SVR 550 805 R9300
CM-MSE	1SVR 550 800 R9300
CM-MSE	1SVR 550 801 R9300
CM-MSS(1)	1SVR 430 800 R9100
CM-MSS(1)	1SVR 430 801 R1100
CM-MSS(2)	1SVR 430 810 R9300
CM-MSS(2)	1SVR 430 811 R9300
CM-MSS(2)	1SVR 430 811 R0300
CM-MSS(2)	1SVR 430 811 R1300
CM-MSS(3)	1SVR 430 710 R9300
CM-MSS(3)	1SVR 430 711 R0300
CM-MSS(3)	1SVR 430 711 R1300
CM-MSS(3)	1SVR 430 711 R2300
CM-MSS(4)	1SVR 430 720 R0400
CM-MSS(5)	1SVR 430 720 R0300
CM-MSS(6)	1SVR 430 710 R0200
CM-MSS(7)	1SVR 430 720 R0500
CM-MSN	1SVR 450 025 R0100

### Rated control supply voltage $U_s$

24 - 240 V AC/DC																			
24 V AC/DC				■		■						■							
24 V AC	■							■											
110 - 130 V AC		■								■									
220 - 240 V AC			■			■				■				■					
380 - 440 V AC														■					

### Rated frequency

50/60 Hz	■	■	■	■	■	■	■	■	■	■	■	■	■						
15 - 400 Hz														■	■	■	■	■	■

### Measuring Circuits

No of measuring/sensor circuits	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	6
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### Monitoring Functions

Wire break monitoring	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Short circuit detection												■	■	■	■	■	■	■	■
Non-volatile fault storage								sel	sel	sel	sel	sel	sel	sel	■			■	■
Auto reset	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Manual reset								■	■	■	■	■	■	■	■	■	■	■	■
Remote reset								■	■	■	■	■	■	■	■	■	■	■	■
Test button														■	■	■	■	■	■

### Output contacts

1 c/o				1	1														
1 n/o	1	1	1																
2 c/o						2	2	2	2	2	2	2	2		2	2*			
1 n/o + 1 n/c														1			1	1	

### Temperature sensor C011, standard version acc. to DIN 44081

Type	Rated response temperature $T_{NF}$	Color coding	Order code	Pack.-unit set
C011-70	70 °C	white-brown	GHC 011 0003 R0001	1
C011-80	80 °C	white-white	GHC 011 0003 R0002	1
C011-90	90 °C	green-green	GHC 011 0003 R0003	1
C011-100	100 °C	red-red	GHC 011 0003 R0004	1
C011-110	110 °C	brown-brown	GHC 011 0003 R0005	1
C011-120	120 °C	gray-gray	GHC 011 0003 R0006	1
C011-130	130 °C	blue-blue	GHC 011 0003 R0007	1
C011-140	140 °C	white-blue	GHC 011 0003 R0011	1
C011-150	150 °C	black-black	GHC 011 0003 R0008	1
C011-160	160 °C	blue-red	GHC 011 0003 R0009	1
C011-170	170 °C	white-green	GHC 011 0003 R0010	1

### Triple temperature sensor C011-3

Type	Rated response temperature $T_{NF}$	Color coding	Order code	Pack.-unit pieces
C011-3-150	150 °C	black-black	GHC 011 0033 R0008	1

# Measuring and Monitoring Relays

## Temperature Monitoring Relays

	Type	Order number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
	C510.01-24	1SAR 700 001 R0005																									
	C510.01-K	1SAR 700 001 R0006																									
	C510.02-24	1SAR 700 002 R0005																									
	C510.02-K	1SAR 700 002 R0006																									
	C510.03-24	1SAR 700 003 R0005																									
	C510.03-K	1SAR 700 003 R0006																									
	C510.11-24	1SAR 700 004 R0005																									
	C510.11-K	1SAR 700 004 R0006																									
	C510.12-24	1SAR 700 005 R0005																									
	C510.12-K	1SAR 700 005 R0006																									
	C510.13-24	1SAR 700 006 R0005																									
	C510.13-K	1SAR 700 006 R0006																									
	C511.01-24	1SAR 700 011 R0005																									
	C511.01-W	1SAR 700 011 R0010																									
	C511.02-24	1SAR 700 012 R0005																									
	C511.02-W	1SAR 700 012 R0010																									
	C511.03-24	1SAR 700 013 R0005																									
	C511.03-W	1SAR 700 013 R0010																									
	C511.11-24	1SAR 700 014 R0005																									
	C511.11-W	1SAR 700 014 R0010																									
	C511.12-24	1SAR 700 015 R0005																									
	C511.12-W	1SAR 700 015 R0010																									
	C511.13-24	1SAR 700 016 R0005																									
	C511.13-W	1SAR 700 016 R0010																									
	C512-24	1SAR 700 100 R0005																									
	C512-W	1SAR 700 100 R0010																									
	C513-W	1SAR 700 110 R0010																									
<b>Rated control supply voltage U<sub>s</sub></b>																											
24 V AC/DC			■		■		■		■		■		■		■		■		■		■		■		■		
24 - 240 V AC/DC																											
110/230 V AC				■		■		■		■		■		■		■		■		■		■		■		■	
<b>Technology</b>																											
Analogue			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Digital																											
<b>Sensor circuits (2 or 3 wire)</b>																											
No of temperature sensors			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
No of thresholds			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
<b>Sensor type</b>																											
Pt100			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Pt1000, KTY83, KTY84, NTC																											
<b>Measuring temperature range</b>																											
-50...+50 °C			■	■																							
0...+100 °C					■	■																					
0...+200 °C							■	■																			
-50...+500 °C																											
<b>Monitoring function</b>																											
Overtemperature			■	■	■	■	■	■																			
Undertemperature																											
<b>Operating principle</b>																											
Closed circuit principle			■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
Open or closed circuit principle																											
<b>Output contacts</b>																											
n/o			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
n/c			1	1	1	1	1	1	1	1	1	1	1														
c/o																											

### Accessories – replaceable cover marking for digital devices

Type	use for	Language	Order code	Pack. unit pieces
C512-D	C512	German	1SAR 700 101 R0100	5
C512-E	C512	English	1SAR 700 102 R0100	5
C513-D	C513	German	1SAR 700 111 R0100	5
C513-E	C513	English	1SAR 700 112 R0100	5

# Liquide Level Monitoring Relays

Type	Order number
CM-ENE MIN	1SVR 550 855 R9500
CM-ENE MIN	1SVR 550 850 R9500
CM-ENE MIN	1SVR 550 851 R9500
CM-ENE MAX	1SVR 550 855 R9400
CM-ENE MAX	1SVR 550 850 R9400
CM-ENE MAX	1SVR 550 851 R9400
CM-ENS	1SVR 430 851 R9100
CM-ENS	1SVR 430 851 R0100
CM-ENS	1SVR 430 851 R1100
CM-ENS	1SVR 430 851 R2100
CM-ENS	1SVR 430 851 R1300
CM-ENS UP/DOWN	1SVR 430 851 R9200
CM-ENS UP/DOWN	1SVR 430 851 R0200
CM-ENS UP/DOWN	1SVR 430 851 R1200
CM-ENN	1SVR 450 055 R0000
CM-ENN	1SVR 450 059 R0000
CM-ENN	1SVR 450 050 R0000
CM-ENN	1SVR 450 051 R0000
CM-ENN	1SVR 450 052 R0000
CM-ENN UP/DOWN	1SVR 450 059 R0100
CM-ENN UP/DOWN	1SVR 450 050 R0100
CM-ENN UP/DOWN	1SVR 450 051 R0100
CM-ENN UP/DOWN	1SVR 450 052 R0100

Rated control supply voltage U <sub>s</sub>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
24 - 240 V AC/DC																				
24 V AC	■			■																
110 - 130 V AC		■																		
220 - 240 V AC			■																	
380 - 415 V AC																				

Sensor circuits	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
No of electrodes (including ground reference)		2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	555

Response sensitivity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0 - 100 kOhm	■	■	■	■																
5 - 100 kOhm																				
250 Ohm - 5 kOhm																				
2,5 - 50 kOhm																				
25 - 500 kOhm																				

Monitoring function	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Dry-running protection	■	■	■																	
Overflow protection																				
Liquide level control																				

Operating principle	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Open circuit principle	■	■	■																	
Closed circuit principle																				
Open or closed circuit principle																				

Output contacts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
n/o	1	1	1	1	1	1														
n/c																				
c/o																				

## Accessories – electrodes

Type	Description	Order code	Pack. unit pieces
CM-KH-3	Compact support for 3 bar electrodes	1SVR 450 056 R6000	1
CM-AH-3	Distance plate for 3 bar electrodes	1SVR 450 056 R7000	1
CM-GM-1	Counter nut for 1" thread	1SVR 450 056 R8000	1

Screw-in bar electrodes / Suspension electrode			
Type	Description	Order code	Pack. unit pieces
CM-SE-300	300 mm	1SVR 450 056 R0000	1
CM-SE-600	600 mm	1SVR 450 056 R0100	1
CM-SE-1000	1000 mm	1SVR 450 056 R0200	1
CM-HE	-	1SVR 402 902 R0000	1

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