

Indicators and transducers





Contents

Selection guide for indicators and transducers p. 4

Indicators and transducers



AC analogue
ammeters
p. 6



AC analogue
voltmeters
p. 10



DC analogue
ammeters
p. 12



DC analogue
voltmeters
p. 14



Modular
transducers
p. 16



Measuring
transducers
p. 18



Timers
p. 20



Changeover
switches
p. 22

Other products



Measuring
devices
p. 24



Indicators and
transducers
p. 26



Selection guide

Indicators and transducers

What function?



What characteristics?

Analogue	
AC and DC measurements <i>p. 6</i>	

Characteristics

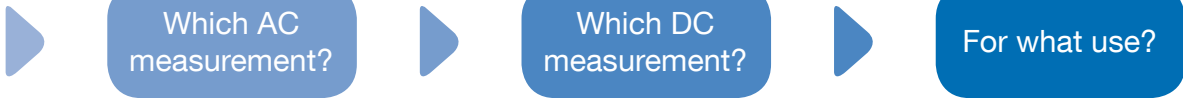
Type	DIN - ROTEX
Indication, display or output	Pointer deflection: 90°
Mounting	Flush-mounted; modular on DIN rail
Format	48 x 48 - 72 x 72 - 96 x 96 (mm)


AC measurements

Current measurements	Direct 1 to 100 A On 5 A CT Indication: I_n ; 5 I_n	Standard ammeter
Voltage measurement	Direct 6 to 600 V	Indication: U_n Standard or switch voltmeter
Active power measurement		
Timers	Voltage 24 to 400 VAC	

DC measurement

Current measurements	Direct 100 μ A to 50 A	On shunt 100 mv
Voltage measurement	Direct 25 to 500 V	
Timers and pulse counters	Voltage 10 to 220 VDC	
Other measurements	Synchronisation devices Temperature measurement	Other values Maritime applications Railway applications



transducers	
	
Measuring transducers <i>p. 18</i>	
CS - CM	
Standardised analogue output	
Protruding or modular on DIN rail	
CS: 75 or 150 mm; CM: 6 modules	
Direct 1 to 5 A. Self-powered or with auxiliary power supply	Current output 4 ... 20 mA
400 V voltage 5 A CT	With auxiliary power supply Current output 4 ... 20 mA



AC analogue ammeters

Indicators and transducers



ampere_027.eps

Compliance with standards

- > IEC 60051-1
- > IEC 60414
- > NF EN 60051-1
- > DIN 43780
- > NF C 42-010
- > VDE 0410
- > BS 5448
- > BS 89



Function

SOCOME **ferromagnetic ammeters** measure the alternating current of any electrical circuit. They are embedded in the front panel of cabinets, enclosures or other equipment.

Characteristics

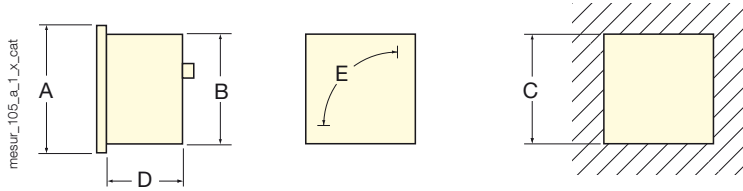
- Pointer deflection: 90°.
- DIN and ROTEX indicators.
- Insulation voltage 660 V.
- Dielectric quality: 2 kV - 50 Hz - 1 mn.
- Consumption: 1.1 VA.
- Operating frequency: 45/65 Hz.
- Motor rating 5 I_n; use on motor circuits up to 8 I_n.
- Connection:
 - Screw mounted,
 - With fast-on lugs for any rating ≤ 15 A.
- Rotary switch: interchangeable, driven (protected face).

Composition of the range

	Case	DIN 48-72-96		ROTEX 72-96	
	Pointer deflection	90°		90°	
	Connection	direct	5 A CT	direct	5 A CT
Normal indication (I_n)	Motor indication (5 I_n)				
Rating	Rating				
0 - 5 A	0 - 5 A - 25 A	•	•	•	•
0 - 10 A	0 - 10 A - 50 A	•	•	•	•
0 - 15 A	0 - 15 A - 75 A	•	•	•	•
0 - 20 A	0 - 20 A - 100 A		•		
0 - 25 A	0 - 25 A - 125 A	•	•	•	•
0 - 40 A	0 - 40 A - 200 A	•	•	•	•
0 - 60 A	0 - 60 A - 300 A	•	•	•	•
0 - 100 A	0 - 100 A - 500 A	•	•		•

Case

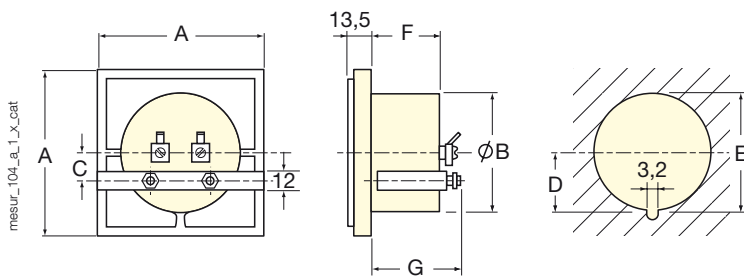
DIN



Pointer deflection: 90°

A	B	C	D	E
48 x 48	44,5 x 44,5	45 ^{+0.6}	59	38
72 x 72	66,5 x 66,5	68 ^{+0.7}	58	65
96 x 96	89 x 89	92 ^{+0.8}	58	100

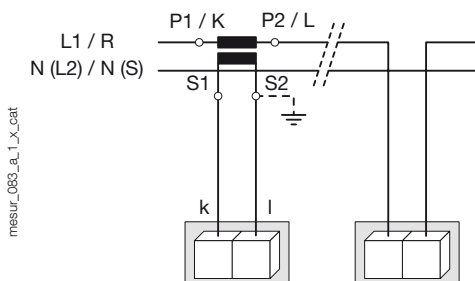
ROTEX



Pointer deflection: 90°

A	B	C	D	E	F	G
72 x 72	54,5	11	28,5	56 ^{+0.5}	34,5	50,8
96 x 96	68	21,6	35,5	70 ^{+0.5}	34,5	50,8

Connections



Normal indication (I_n) with 90° pointer deflection

References

Direct connection					
	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A		ROTEX 72x72 R72A90-A	
Rating	Reference	Reference		Reference	
0 - 5 A	192A 1200	192A 1300		192C 1300	
0 - 10 A	192A 1201	192A 1301		192C 1301	
0 - 15 A	192A 1202	192A 1302		192C 1302	
0 - 25 A	192A 1203	192A 1303		192C 1303	
0 - 40 A	192A 1204	192A 1304		192C 1304	
0 - 60 A	192A 1205	192A 1305			
0 - 100 A		192A 1310			

Connection to 5 A CT					
	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A	DIN 96x96 D96A90-A	ROTEX 72x72 R72A90-A	ROTEX 96x96 R96A90-A
Rating	Reference	Reference	Reference	Reference	Reference
0 - 5 A		192A 3300			
0 - 10 A	192A 2201	192A 3301	192A 4401	192C 3301	
0 - 15 A		192A 3302		192C 3302	
0 - 20 A	192A 2235	192A 3335			
0 - 25 A	192A 2203	192A 3303		192C 3303	
0 - 30 A				192C 3336	
0 - 40 A	192A 2204	192A 3304		192C 3304	
0 - 50 A	192A 2222	192A 3322	192A 4422	192C 3322	
0 - 60 A	192A 2205	192A 3305		192C 3305	
0 - 75 A		192A 3323			
0 - 100 A	192A 2206	192A 3306	192A 4406	192C 3306	192C 4406
0 - 125 A	192A 2224	192A 3324			
0 - 150 A		192A 3307	192A 4407	192C 3307	192C 4407
0 - 200 A	192A 2220	192A 3320		192C 3320	
0 - 250 A	192A 2208	192A 3308		192C 3308	192C 4408
0 - 300 A	192A 2221	192A 3321		192C 3321	
0 - 400 A	192A 2209	192A 3309	192A 4409	192C 3309	
0 - 500 A	192A 2225	192A 3325	192A 4425		
0 - 600 A	192A 2210	192A 3310	192A 4410	192C 3310	
0 - 750 A	192A 2230		192A 4430	192C 3330	
0 - 800 A	192A 2226	192A 3326		192C 3326	
0 - 1000 A		192A 3311			192C 4411
0 - 1250 A	192A 2231	192A 3331			
0 - 1500 A			192A 4412		
0 - 2000 A		192A 3328	192A 4428	192C 3328	
0 - 2500 A		192A 3313	192A 4413		

Accessories

	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A	DIN 96x96 D96A90-A	ROTEX 72x72 R72A90-A	ROTEX 96x96 R96A90-A
	Reference	Reference	Reference	Reference	Reference
Terminal protection cover		192Z 1000	192Z 1011		
2 safety caps	192Z 1016	192Z 1016	192Z 1016	192Z 1016	192Z 1016
Mounting bracket and screws	179Z 5000	179Z 5010	179Z 5010	179Z 5020	179Z 5022
Gasket	192Z 0007	192Z 0008	192Z 0009	192Z 0011	192Z 0012
Replacement glass	179Z 2000	179Z 2010	179Z 2020	179Z 2030	179Z 2040

Motor indication ($5 I_n$) with 90° pointer deflection

References

Direct connection					
	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A		ROTEX 72x72 R72A90-A	ROTEX 96x96 R96A90-A
Rating	Reference	Reference		Reference	Reference
0 - 5 A - 25 A	192B 1200	192B 1300		192D 1300	192D 1400
0 - 10 A - 50 A	192B 1201	192B 1301		192D 1301	192D 1401
0 - 15 A - 75 A	192B 1202	192B 1302		192D 1302	192D 1402
0 - 25 A - 125 A	192B 1203	192B 1303		192D 1303	192D 1403
0 - 40 A - 200 A	192B 1204	192B 1304		192D 1304	
0 - 60 A - 300 A	192B 1205				

Connection to 5 A CT					
	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A	DIN 96x96 D96A90-A	ROTEX 72x72 R72A90-A	ROTEX 96x96 R96A90-A
Rating	Reference	Reference	Reference	Reference	Reference
0 - 5 A - 25 A	192B 2200	192B 3300		192D 3300	192D 4400
0 - 10 A - 50 A	192B 2201	192B 3301	192B 4401	192D 3301	192D 4401
0 - 15 A - 75 A	192B 2202	192B 3302	192B 4402	192D 3302	192D 4402
0 - 20 A - 100 A	192B 2215	192B 3315		192D 3315	
0 - 25 A - 125 A	192B 2203	192B 3303		192D 3303	192D 4403
0 - 30 A - 150 A	192B 2216	192B 3316		192D 3316	
0 - 40 A - 200 A	192B 2204	192B 3304	192B 4404	192D 3304	192D 4404
0 - 50 A - 250 A	192B 2222	192B 3322		192D 3322	192D 4422
0 - 60 A - 300 A	192B 2205	192B 3305		192D 3305	
0 - 75 A - 375 A	192B 2223	192B 3323		192D 3323	192D 4423
0 - 100 A - 500 A	192B 2206	192B 3306	192B 4406	192D 3306	192D 4406
0 - 125 A - 625 A	192B 2224	192B 3324		192D 3324	
0 - 150 A - 750 A	192B 2207	192B 3307	192B 4407	192D 3307	192D 4407
0 - 200 A - 1000 A	192B 2220	192B 3320		192D 3320	192D 4420
0 - 250 A - 1250 A	192B 2208	192B 3308		192D 3308	
0 - 300 A - 1500 A		192B 3321		192D 3321	
0 - 400 A - 2000 A	192B 2209	192B 3309	192B 4409	192D 3309	
0 - 500 A - 2500 A	192B 2225		192B 4425	192D 3325	
0 - 600 A - 3000 A				192D 3310	
0 - 750 A - 3750 A		192B 3317			
0 - 800 A - 4000 A				192D 3326	

Accessories

	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A	DIN 96x96 D96A90-A	ROTEX 72x72 R72A90-A	ROTEX 96x96 R96A90-A
	Reference	Reference	Reference	Reference	Reference
Terminal protection cover		192Z 1000	192Z 1011		
2 safety caps	192Z 1016	192Z 1016	192Z 1016	192Z 1016	192Z 1016
Mounting bracket and screws	179Z 5000	179Z 5010	179Z 5010	179Z 5020	179Z 5022
Gasket	192Z 0007	192Z 0008	192Z 0009	192Z 0011	192Z 0012
Replacement glass	179Z 2000	179Z 2010	179Z 2020	179Z 2030	179Z 2040



AC analogue voltmeters

Indicators and transducers

Indicators and transducers



voltm_014.eps

Compliance with standards

- > IEC 60051-1
- > IEC 60414
- > NF EN 60051-1
- > DIN 43780
- > NF C 42-010
- > VDE 0410
- > BS 5448
- > BS 89



Function

SOCOMEC **ferromagnetic voltmeters** measure the AC voltage of any electrical circuit. They are embedded in the front panel of cabinets, enclosures or other equipment.

Characteristics

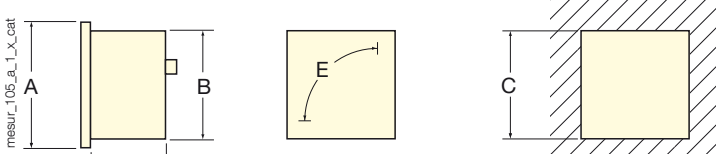
- Pointer deflection: 90°.
- Insulating voltage: 660 V.
- Dielectric quality: 2 kV - 50 Hz - 1 mn.
- Consumption: 3 VA.
- Operating frequency: 45/65 Hz.
- Connection: screw or fast-on lugs.

Composition of the range

	Case	DIN 48-72-96	ROTEX 72-96
	Pointer deflection	90°	90°
	Connection	direct	direct
Rating			
0 - 150 V		•	•
0 - 250 V		•	•
0 - 300 V		•	•
0 - 500 V		•	•
0 - 600 V		•	•

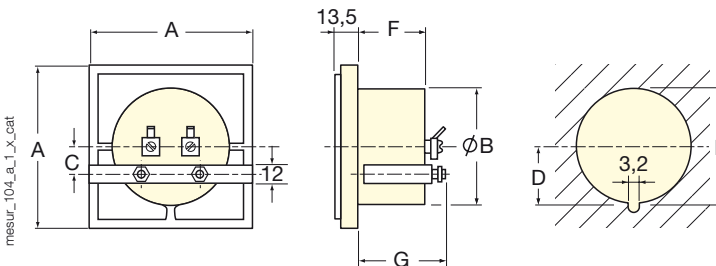
Case

DIN



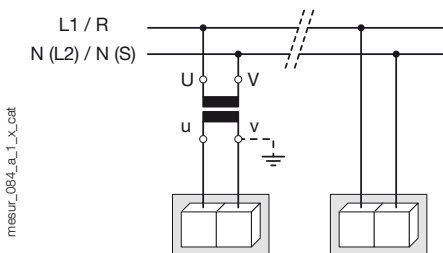
Pointer deflection: 90°				
A	B	C	D	E
48 x 48	44.5 x 44.5	45 ^{+0.6}	59	38
72 x 72	66.5 x 66.5	68 ^{-0.7}	58	65
96 x 96	89 x 89	92 ^{-0.8}	58	100

ROTEX



Pointer deflection: 90°						
A	B	C	D	E	F	G
72 x 72	54.5	11	28.5	56 ^{±0.5}	34.5	50.8
96 x 96	68	21.6	35.5	70 ^{±0.5}	34.5	50.8

Connections



References

Normal indication with 90° pointer deflection

Rating	Direct connection				
	DIN 48x48 D48A90-V	DIN 72x72 D72A90-V	DIN 96x96 D96A90-V	ROTEX 72x72 R72A90-V	ROTEX 96x96 R96A90-V
0 - 150 V	Reference 192G 1003	Reference	Reference	Reference	Reference
0 - 250 V	Reference 192G 1004	Reference 192G 1104	Reference 192G 1204	Reference 192G 2104	Reference
0 - 300 V	Reference	Reference 192G 1105	Reference	Reference 192G 2105	Reference
0 - 500 V	Reference 192G 1007	Reference 192G 1107	Reference 192G 1207	Reference 192G 2107	Reference 192G 2207
0 - 600 V	Reference	Reference	Reference 192G 1208	Reference	Reference



DC analogue ammeters

Indicators and transducers



Compliance with standards

- > IEC 60051-1
- > IEC 60414
- > NF EN 60051-1
- > DIN 43780
- > NF C 42-010
- > VDE 0410
- > BS 5448
- > BS 89



Function

SOCOMEc **magnetolectric ammeters** measure the direct current of any electrical circuit. They are embedded in the front panel of cabinets, enclosures or other equipment.

Characteristics

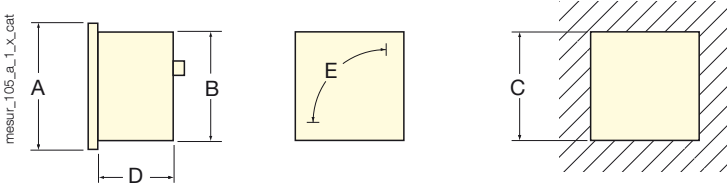
- Pointer deflection: 90°.
- Insulating voltage: 660 V.
- Dielectric quality 2 kV - 50 Hz - 1 mn.
- Consumption: connection on shunt 100 mV = 1 mA.
- Internal resistance: 1000 Ω/V.
- Connection: screw or fast-on lugs.
- Use on 100 mV shunt: pre-calibrated for 2.5 mm² connection over a distance between the shunt and the 0.5 to 2.5 m indicator.
- Interchangeable guided dial (needle protection).

Composition of the range

Case	DIN 48-72-96		ROTEX 72	
	90°		90°	
Pointer deflection	90°		90°	
Connection	direct	On shunt 100 mV	direct	On shunt 100 mV
Rating				
0 - 100 µA	•			
0 - 10 A	•	•	•	•
0 - 15 A	•		•	
0 - 25 A	•	•	•	•
0 - 40 A		•		•
0 - 50 A	•			
0 - 100 - 600 A		•		•

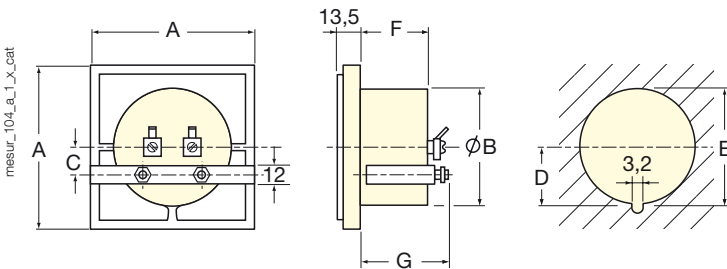
Case

DIN



Pointer deflection: 90°				
A	B	C	D	E
48 x 48	44.5 x 44.5	45 ^{+0.6}	59	38
72 x 72	66.5 x 66.5	68 ^{-0.7}	58	65
96 x 96	89 x 89	92 ^{-0.8}	58	100

ROTEX



Pointer deflection: 90°						
A	B	C	D	E	F	G
72 x 72	54.5	11	28.5	56 ^{±0.5}	34.5	50.8
96 x 96	68	21.6	35.5	70 ^{±0.5}	34.5	50.8

References

Direct connection				
	DIN 48x48 D48C90-A	DIN 72x72 D72C90-A	DIN 96x96 D96C90-A	ROTEX 72x72 R72C90-A
Rating	Reference	Reference	Reference	Reference
0 - 100 µA	192E 1201			
0 - 10 A	192E 1227	192E 1327	192E 1427	192F 1327
0 - 15 A		192E 1361		192F 1328
0 - 25 A	192E 1229			192F 1329
0 - 50 A		192E 1365		

Connection on shunt 100 mV ⁽¹⁾				
	DIN 48x48 D48C90-A	DIN 72x72 D72C90-A	DIN 96x96 D96C90-A	ROTEX 72x72 R72C90-A
Rating	Reference	Reference	Reference	Reference
0 - 10 A		192E 3327	192E 4427	192F 3327
0 - 25 A		192E 3329	192E 4429	192F 3329
0 - 40 A	192E 2230	192E 3330		
0 - 60 A	192E 2231		192E 4431	
0 - 100 A	192E 2232	192E 3332	192E 4432	
0 - 150 A	192E 2233		192E 4433	
0 - 250 A	192E 2234		192E 4434	
0 - 400 A			192E 4435	
0 - 600 A				192F 3336

(1) To order 'measuring shunts'

voir catalogue général.

Accessories

	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A	DIN 96x96 D96A90-A	ROTEX 72x72 R72A90-A
	Reference	Reference	Reference	Reference
Terminal protection cover		192Z 1000	192Z 1011	
2 safety caps	192Z 1016	192Z 1016	192Z 1016	192Z 1016
Mounting bracket and screws	179Z 5000	179Z 5010	179Z 5010	179Z 5020
Gasket	192Z 0007	192Z 0008	192Z 0009	192Z 0011
Replacement glass	179Z 2000	179Z 2010	179Z 2020	179Z 2030



DC analogue voltmeters

Indicators and transducers

Indicators and transducers



voltm_015.eps

Compliance with standards

- > IEC 60051-1
- > IEC 60414
- > NF EN 60051-1
- > DIN 43780
- > NF C 42-010
- > VDE 0410
- > BS 5448
- > BS 89



Function

SOCOME **magnetic-electric voltmeters** measure the DC voltage on any electrical circuit.

They are embedded in the front panel of cabinets, enclosures or other equipment.

Characteristics

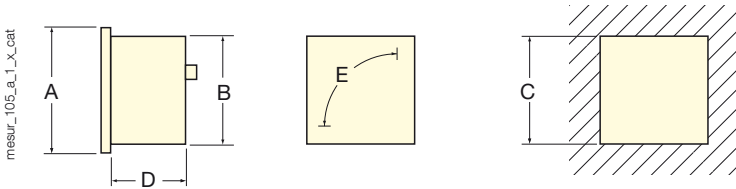
- Pointer deflection: 90°.
- Insulating voltage: 660 V.
- Dielectric quality: 2 kV - 50 Hz - 1 mn.
- Consumption: internal resistance 1000 Ω/V.
- Any voltage above 600 V requires a voltage divider.
- Connection: screw or fast-on lugs.
- Interchangeable guided dial (needle protection).

Composition of the range

Case	DIN 48-72-96	ROTEX 72
Pointer deflection	90°	90°
Rating		
0 - 25 - 250 V	•	•
0 - 400 - 500 V	•	•

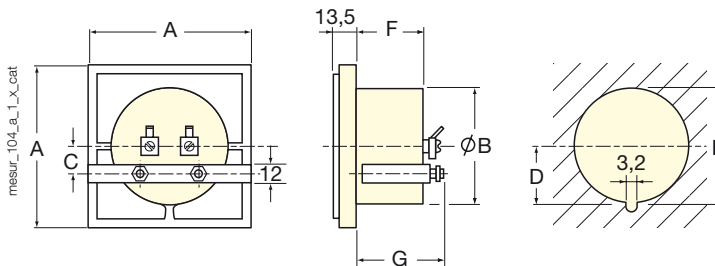
Case

DIN



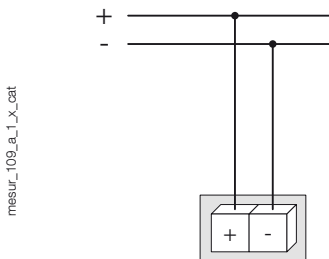
Pointer deflection: 90°				
A	B	C	D	E
48 x 48	44.5 x 44.5	45 ^{+0.6}	59	38
72 x 72	66.5 x 66.5	68 ^{-0.7}	58	65
96 x 96	89 x 89	92 ^{-0.8}	58	100

ROTEX



Pointer deflection: 90°						
A	B	C	D	E	F	G
72 x 72	54.5	11	28.5	56 ^{±0.5}	34.5	50.8

Connections



References

	Direct connection			
	DIN 48x48 D48C90-V	DIN 72x72 D72C90-V	DIN 96x96 D96C90-V	ROTEX 72x72 R72C90-V
Rating	Reference	Reference	Reference	Reference
0 - 25 V	192G 5012	192G 5112		192G 6112
0 - 40 V	192G 5013	192G 5113	192G 5213	192G 6113
0 - 60 V	192G 5014	192G 5114	192G 5214	192G 6114
0 - 100 V	192G 5015		192G 5215	192G 6115
0 - 150 V	192G 5016	192G 5116	192G 5216	192G 6116
0 - 250 V		192G 5117		
0 - 400 V				192G 6119
0 - 500 V		192G 5120	192G 5220	

Accessories

	DIN 48x48 D48A90-A	DIN 72x72 D72A90-A	DIN 96x96 D96A90-A	ROTEX 72x72 R72A90-A
	Reference	Reference	Reference	Reference
Terminal protection cover		192Z 1000	192Z 1011	
2 safety caps	192Z 1016	192Z 1016	192Z 1016	192Z 1016
Mounting bracket and screws	179Z 5000	179Z 5010	179Z 5010	179Z 5020
Gasket	192Z 0007	192Z 0008	192Z 0009	192Z 0011
Replacement glass	179Z 2000	179Z 2010	179Z 2020	179Z 2030

Modular transducers

Indicators and transducers



trans_076_a_1_cat

Current transducer

Function

SOCOMEC **modular transducers** are particularly suited to the service sector. They come in widths of multiples of 17.5 mm, are mounted on a symmetrical rail and fit into a 45-mm high cutout.

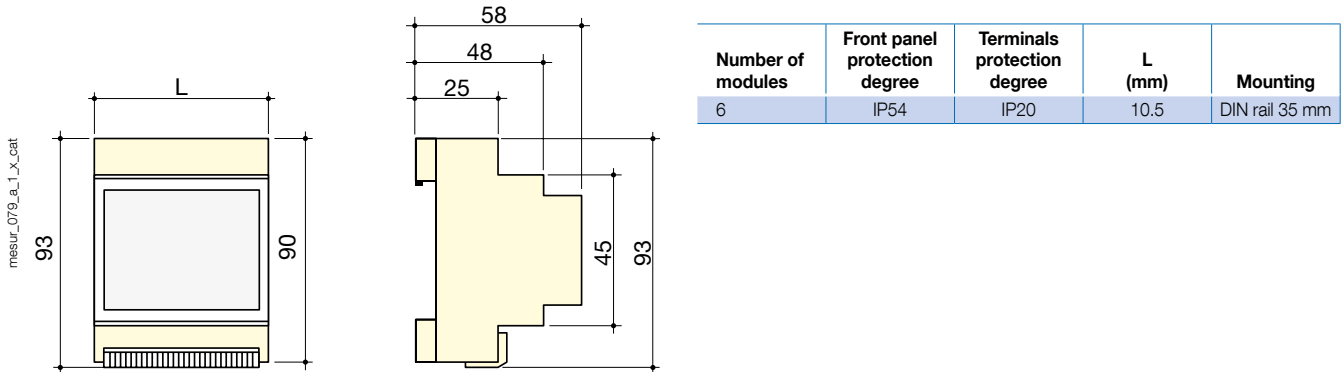
Characteristics

- Insulation voltage 600 V.
- Dielectric quality: 2 kV - 50 Hz - 1 mn.
- Frequency 50 Hz.
- Permanent overload: 1.2 In and/or 1.2 Un depending on the device.
- Operating temperature: -25 to + 50°C.

Composition of the range

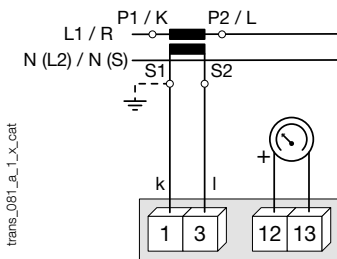
- Modular case 6 o modules.
- Self-powered current transducer.
- Current transducer with auxiliary power supply.

Dimensions



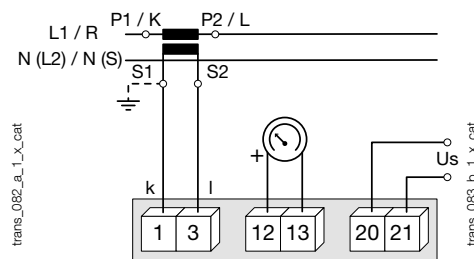
Connections

Self-powered current transducer



Connections with 1 CT without U_s

Current transducer with auxiliary power supply



Connections with 1 CT and U_s

References

Current transducer					CMA-A4
Input	Output	Auxiliary power supply	Frequency	Number of modules	Reference
5 A	4 - 20 mA	230 VAC	50 Hz	6	192Y 5015
5 A	0 - 20 mA	Self-powered	50 Hz	6	192Y 5013
1 A	4 - 20 mA	230 VAC	50 Hz	6	192Y 5022



Measuring transducers

Indicators and transducers



Power transducer, current



Current transducer

Function

SOCOMECC transducers convert an electrical parameter (A, W) into a DC signal. They come in a protruding case (CS range).

Characteristics

- Dielectric quality:
 - 2.5 kV (50 Hz - 1 mm) between input and output,
 - 2.5 kV (50 Hz - 1 mm) between power supply and other terminals,
 - 4 kV (50 Hz - 1 mm) between earth and other terminals.
- Accuracy class: 0.5 or 0.2 depending on the model.
- Response time < 200 ms (0 - 90% of the output signal).
- Overloads:
 - Circuit I: 1.2 I_n permanent; 20 I_n/3 s, - 40 I_n/1 s,
 - Circuit U: 1.2 U_n permanent; 2 U_n/10 s.
- Max. load resistance:
 - Current output: R₀ (Ω) = 12 V/10 (mA),
 - Voltage output: R₀ (Ω) = V₀/10 mA.
- Consumption:
 - Self-powered: 1.5 VA,
 - Current input: 0.2 VA,
 - Voltage input: (U_n x 1 mA) VA.
- Operating temperature: -10 °C to +60°C.
- Residual ripple rate: 0.3%.
- Operating frequency: 50/60 Hz.

References

Current transducer with auxiliary power supply

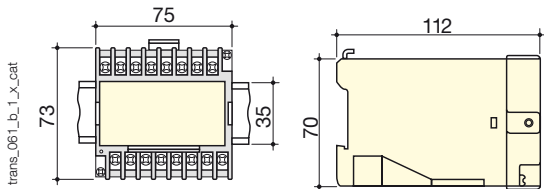
Input	Output	Auxiliary power supply	Frequency	CSA-A4 Reference
5 A	4 - 20 mA	230 VAC	50 Hz	192Y 1104
1 A	4 - 20 mA	230 VAC	50 Hz	192Y 1106

Active power transducer with auxiliary power supply

Input	Connection	Output	Auxiliary power supply	CSA-P3FE Three-phase Reference	CSA-P3FNE Three-phase Reference	CSA-P4FNE Three-phase Reference
400 VAC	5 A CT	4 - 20 mA	230 VAC	192Y 3132	192Y 3332	192Y 3432
400 VAC	5 A CT	4 - 20 mA	24 VDC	179Y 3133	-	-
400 VAC	5 A CT	4 - 20 mA	24 VDC	-	179Y 3333	-

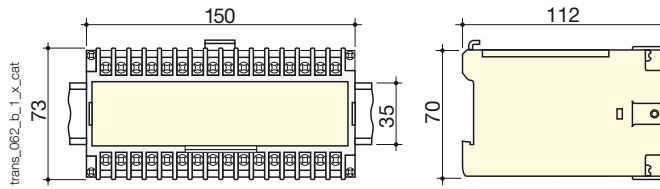
Cases

Case A



IP20 for the case - IP10 for the terminal

Case B



IP20 for the case - IP10 for the terminal

Characteristics

Current transducer

Model	Measurement	Input	Output	Auxiliary power supply U_s	Number of CTs	Connection diagram	Case
CSA-A	RMS ⁽¹⁾	1 - 5 A	1 - 5 - 10 - 20 mA	No	1	SC 1	A
CSA-A4	RMS ⁽¹⁾	1 - 5 A	4 - 20 mA / 0 - 10 V	Yes	1	SC 2	A

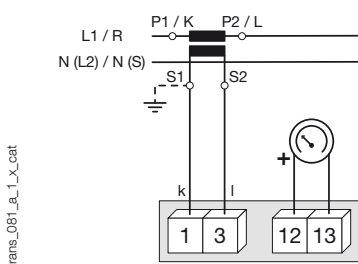
(1) RMS: sine wave.

Active power transducer

Model	Network type	Input	Output	Auxiliary power supply U_s	Number of CTs	Connection diagram	Case
CSA-P3FE	Balanced 3-wire 3-phase	100 - 115 - 230 - 400 V 1 - 5 A	1 - 5 - 10 - 20 mA 4 - 20 mA / 0 - 10 V	Yes	1	SC 16	B
CSA-P3FNE	Non-balanced 3-wire 3-phase	100 - 115 - 230 - 400 V 1 - 5 A	1 - 5 - 10 - 20 mA 4 - 20 mA / 0 - 10 V	Yes	2	SC 18	B
CSA-P4FNE	Non-balanced 4-wire 3-phase	100 - 115 - 230 - 400 V 1 - 5 A	1 - 5 - 10 - 20 mA 4 - 20 mA / 0 - 10 V	Yes	3	SC 20	B

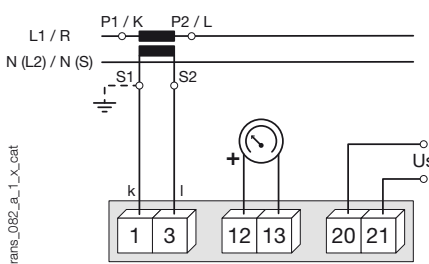
Connections

SC 1: Self-powered current transducer (CSA-A)



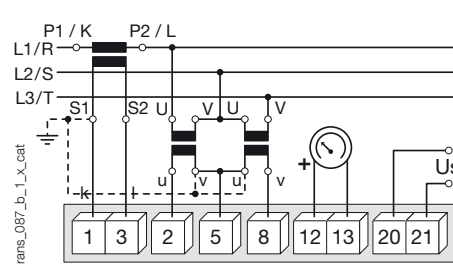
Connections with 1 CT without U_s

SC 2: Current transducer with auxiliary power supply (CSA-A4)



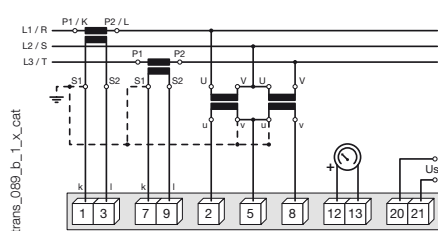
Connections with 1 CT and U_s

SC 16: Power transducer (CSA-P3FE)



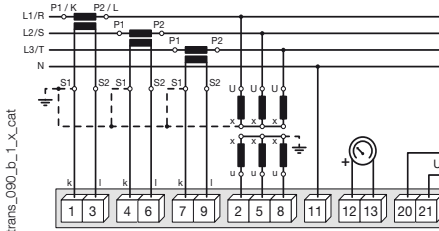
Connections with 1 CT 2 VTs and U_s

SC 18: Power transducer (CSA-P3FNE)



Connections with 2 CT 2 VTs and U_s

SC 20: Power transducer (CSA-P4FNE)



Connections with 3 CT 3 VTs and U_s



Timers

Indicators and transducers



Function

Timers clock up the operating hours of machines or electrical equipment.

Characteristics

- 7 power supply voltages: 10 to 80 VDC
- 80 to 220 VDC - 24 VAC - 48 VAC
- 115 VAC - 230 VAC - 400 VAC.
- 2 operating frequencies: 50 - 60 Hz.
- 2 standardised case models:
DIN with square sections and a modular case.
- 2 sizes of case:
48 x 48, 72 x 72 mm.
- Dielectric quality: 2 kV - 50 Hz - 1 mn.
- Consumption:
- 3 VA in AC,
- 0.5 to 27 mA depending on the DC model.
- IP65 front panel for DIN 48.
- IP52 for DIN 72.
- Operating temperature:
-25 to + 40°C.
- Humidity rate:
85% non-condensing.

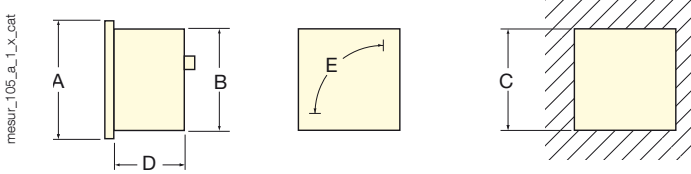
References

DIN case			
Power supply voltage	Frequency	DIN 48x48 D48-H	DIN 72x72 D72-H
		Reference	Reference
24 VAC	50 Hz	192Q 3098	
24 VAC	60 Hz	192Q 3096	
48 VAC	50 Hz	192Q 3099	
48 VAC	60 Hz	192Q 3097	
115 VAC	50 Hz	192Q 3101	
115 VAC	60 Hz	192Q 3106	
230 VAC	50 Hz	192Q 3100	
230 VAC	60 Hz	192Q 3105	
400 VAC	50 Hz	192Q 3102	192Q 3202
10 to 80 VDC		192Q 3108	
80 to 220 VDC		192Q 3111	

Modular case				Timer
Power supply	Frequency	Max. value	Number of modules	Reference
230 VAC	50 Hz	99999.9 h	2	192Q 5000
24 VAC	50 Hz	99999.9 h	2	192Q 5001
10 to 27 VDC		99999.9 h	2	192Q 5002

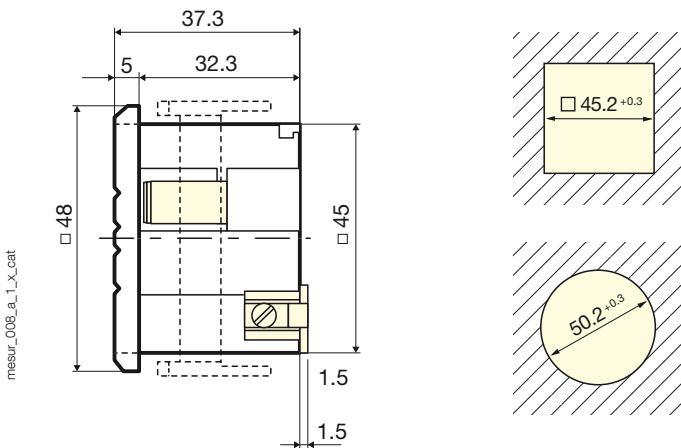
Dimensions

Case DIN 72



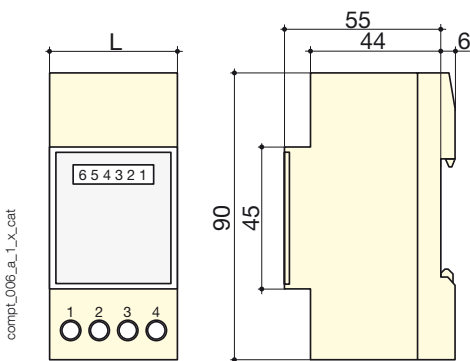
A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
72 x 72	66.5 x 66.5	68 ^{-0.7}	58	65

Case DIN 48



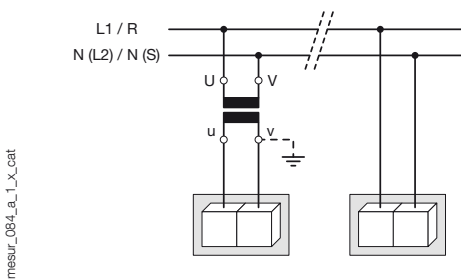
- With protection against direct contact
- With square 48 mm panel, square 45.2 mm cutout only.
- With square 52 mm underside, square 45.2 mm cutout and Ø 50.2 mm only.

Modular case



Number of modules	Front panel protection degree	Degree of protection on terminals	L (mm)	Mounting
2	IP65	IP20	36	DIN rail 35 mm

Connections





Changeover switches

Indicators and transducers



Function

Voltmeter and ammeter switches ensure the phase changeover switching on a three-phase circuit for voltage and current measurement.

They are available in two cases:

- with screw fixing
- with a central fixing.

Characteristics

- Rated current: 16 A.
- Connection via M 3.5 crews.
- IP44 (screw fixing).
- IP65 (central fixing).
- Insulation voltage: 660 V.

Composition of the range

- Voltmeter switch:
 - 4 positions for reading between phases,
 - 4 positions for reading between phase and neutral,
 - 7 positions for reading between phases and phase and neutral.
- Ammeter switch - 4 positions: 0 - L1 - L2 - L3 with ammeter and 3 CTs (with or without common point).

References

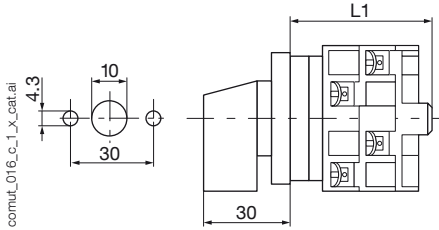
Voltmeter switch					
		Screw fixing		Central fixing	
Number of positions	Type	Reference	Reference	Reference	Reference
4 (phase-to-phase measurement)	SV4 PL/L	192K 0011		192K 1011	
4 (phase-to-neutral measurement)	SV4 PL/N	192K 0012		192K 1012	
7 (phase-to-phase and phase-to-neutral measurement)	SV7 PL/LN	192K 0013		192K 1013	

Ammeter switch					
		Screw fixing		Central fixing	
Number of positions	Type	Reference	Reference	Reference	Reference
4 with common point	SA4 PAP	192K 0022		192K 1022	
4 without common point	SA4 PSP	192K 0023		192K 1023	

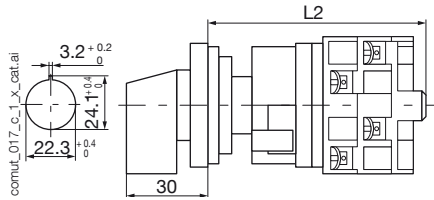
Modular changeover switch					
					MAC
Number of positions	Measurement	Connection	Admissible voltages between phase and neutral	Number of modules	Reference
4	ammeter	TC 1 A ou TC 5 A		3	192K 5000
4	voltmeter PH - PH	115 / 230 / 440 VAC		3	192K 5001
7	voltmeter PH - N + PH - PH	115 / 230 / 440 VAC	115 / 230 / 440 VAC	3	192K 5002

Dimensions

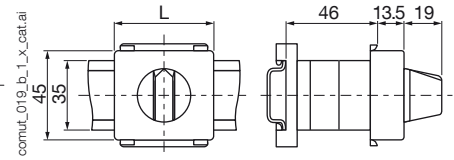
Screw fixing



Central fixing



Com Changeover switch mutateur



Number of positions	Switching type	L1 (mm)
4	voltmètre	44
7	voltmètre	56
4 with common point	ampèremètre	56
4 without common point	ampèremètre	79

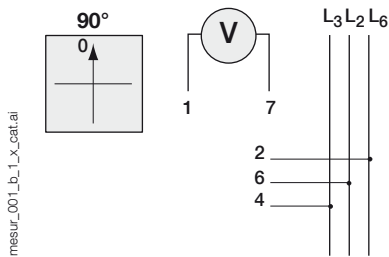
Number of positions	Switching type	L2 (mm)
4	voltmètre	66
7	voltmètre	79
4 with common point	ampèremètre	77
4 without common point	ampèremètre	101

Number of positions	Degree of protection		L (mm)	Mounting
	Front	Terminal		
3	IP44	IP20	52,5	rail DIN 35 mm

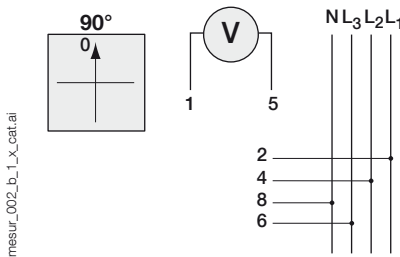
Connections

Voltmeter switch

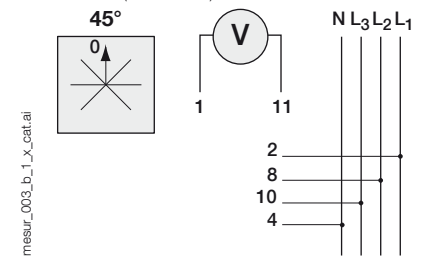
4 positions: phase-to-phase measurement (SV4 PL/L)



4 positions: phase-to-neutral measurement (SV4 PL/N)

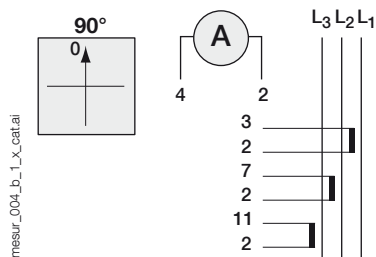


7 positions: phase-to-phase and phase-to-neutral measurement (SV7 PL/LN)

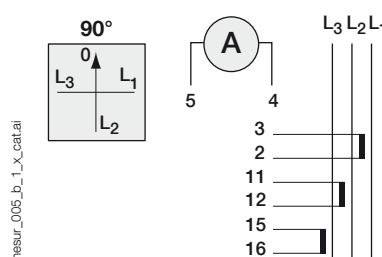


Ammeter switch

4 positions with common point (SA4 PAP)

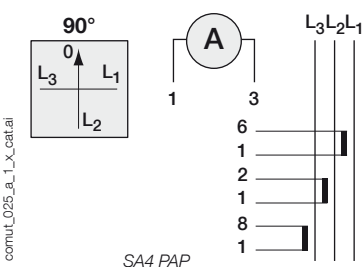


4 positions without common point (SA4 PSP)



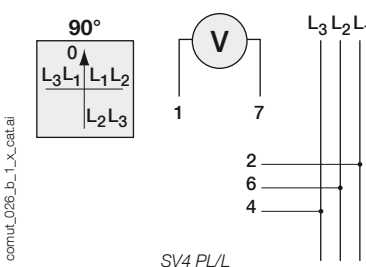
Ammeter switch

4 positions with common point



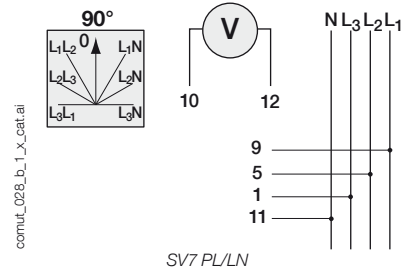
Voltmeter switch - 4 positions:

measure phase-phase



Voltmeter switch - 7 positions:

phase-to-phase and phase-neutral measurement





Other products

Measuring devices

Current sensors

CTP: Automatic CT short-circuiting device



Use

The CTP protects people and equipment from the dangers of opening the secondary circuit of a CT.

Compliance with standards

- > NF C 15-100 articles 473.1.4-556.3
- > GAM EG 13.C (military standard)

Other regulations

- > As per French Decree no. 88-1056 of 14/11/88: Occupational Safety
- > As per French Decree no. 91-986 Mines and Pits

References

Rating (A)	Voltages max. peak	Operating frequency	Max. voltage differential	Reference
5 A	21 VAC	45 ... 400 Hz	600 VAC	4990 0521
5 A	25 VAC	45 ... 400 Hz	600 VAC	4990 0525 ⁽¹⁾

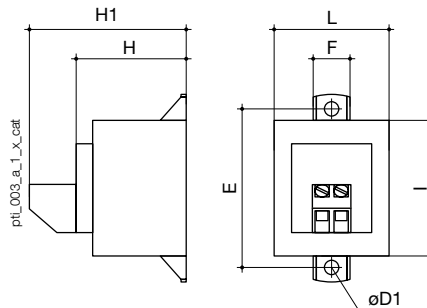
(1) DCN-approved (Maritime design management).

Characteristics

Casing protection degree	IP55
Terminal block protection degree	IP20
Connection section	2.5 mm ²
Weight	82 g

Rating (A)	D1	E	F	H	H1	I	L
5	4.2	47	9.6	32	44	41	34.7

Dimensions



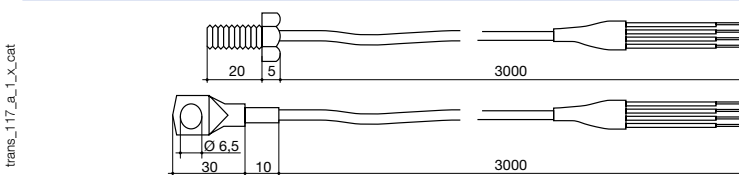
Screw-in PT100 probe

- Sensing element in accordance with IEC 751 Class A.
- 4-wire mounting
- Output through 3 metres of Teflon insulated cable.
- Tolerance Class A:
 - Accurate to -50°C: ± 0.14°C,
 - Accurate to 0°C: ± 0.13°C,
 - Accurate to +50°C: ± 0.25°C,
 - Accurate to +100°C: ± 0.26°C,
 - Accurate to +150°C: ± 0.33°C.

References

Products	Reference
PT100 temperature probe with M6 screws	4825 0208
PT100 temperature probe with M6 eye-bolts	4825 0209

Dimensions

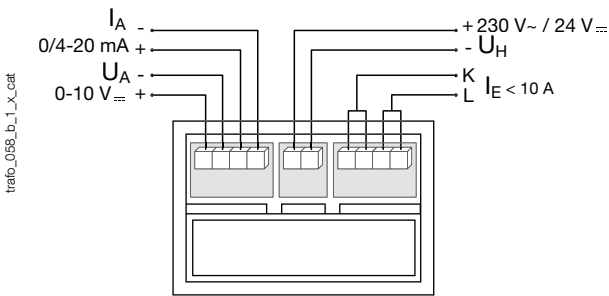


Transformer unit with built-in converter (CTA-VA)



Compact measurement converter with bypass transformer unit with cables (Ø27 mm) or busbars (40 x 10 mm).

- Input:
 - Direct connection 0 to 10 A
 - CT primary, 50 to 400 A (self-powered)
 - CT primary, 15 to 500 A (auxiliary power supply)
- Output:
 - 0-20 mA, 0-10 V (model CTA-VA),
 - 4-20 mA and 0-10 V (model CTA-VA4).
- Self-powered or auxiliary power supply 24 VDC or 230VAC.
- Dimensions: 135 x 80 x 50 mm.



References

	0-20 mA / 0-10 VDC self-powered	4-20 mA / 0-10 VDC 230 VAC	4-20 mA / 0-10 VDC 24 VDC
Primary	Reference	Reference	Reference
5 A	-	192Y 0602	192Y 0902
10 A	-	192Y 0603	-
15 A	-	192Y 0604	192Y 0904
20 A	-	192Y 0605	192Y 0905
25 A	-	192Y 0606	192Y 0906
30 A	-	192Y 0607	192Y 0907
40 A	-	192Y 0608	192Y 0908
50 A	192Y 0409	-	192Y 0909
60 A	192Y 0410	-	-
75 A	192Y 0411	192Y 0611	192Y 0911
100 A	192Y 0412	192Y 0612	192Y 0912
250 A	192Y 0425	-	192Y 0925
400 A	192Y 0440	-	192Y 0940
500 A	-	192Y 0650	-

Voltage transformer unit BTV 25



Applications

Measures and converts the input value taken at the primary of a transformer unit by a directly proportionate voltage signal. BTV 25 models are voltage transformer units.

Recommendation

As these voltage transformer units are specially designed to supply power to measuring equipment, we do not recommend connecting them to other elements that could compromise their accuracy. This is due to the effect of the phase-shift error. If consumption is greater than 25 VA, another transformer must be added.

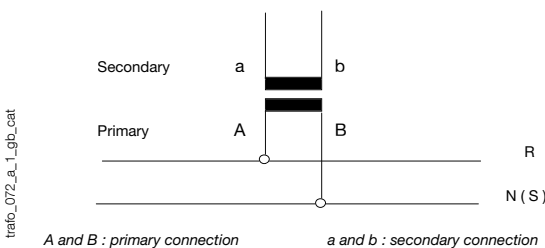
Characteristics

Accuracy class	1%
Dielectric quality	3 kV for 1 min.
Operating frequency	50 - 60 Hz
Permanent overload	1.2 U_n

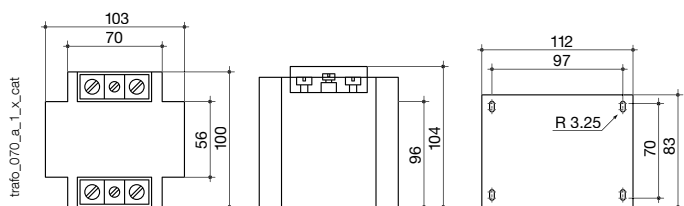
References

Primary	Secondary	Power	Reference
230 VAC	100 VAC	25 VA	192M 2020
400 VAC	100 VAC	25 VA	192M 2030
440 VAC	100 VAC	25 VA	192M 2044
500 VAC	100 VAC	25 VA	192M 2050
600 VAC	100 VAC	25 VA	192M 2060
660 VAC	100 VAC	25 VA	192M 2066
800 VAC	100 VAC	25 VA	Please ask us for information

Connection



Dimensions





Other products

Indicators and transducers

Switchable analogue voltmeters panel mounted



- For three-phase networks, direct 500 V connection.
- Format DIN 72 - 96.
- 6-position switch:
 - Without phase rotation indicator
 - With phase rotation indicator
- Pointer deflection: 90°

References

DIN 72 x 72

Rating	Sequence meter	Reference
0 ... 500 VAC	Without	179G 3200
0 ... 500 VAC	With	179G 3201

DIN 96 x 96

Rating	Sequence meter	Reference
0 ... 500 VAC	Without	179G 4200

LED synchroscope



References

Type	Input	Frequency	Reference
D96A-SSL	100 VAC	50-60 Hz	192Q 2221
D96A-SSL	400 VAC	50-60 Hz	192Q 2224
D96A-SSLVR	100 VAC	50-60 Hz	192Q 2231
D96A-SSLVFR	100 VAC	50-60 Hz	192Q 2241

Model: SOCOMEC
Production: SOCOMEC
Photography: Martin Bernhart et Studio Objectif
Printing:

Socomec: our innovations supporting your energy performance

1 independent manufacturer

3,600 employees
worldwide

10 % of sales revenue
dedicated to R&D

400 experts
dedicated to service provision

Your power management expert



POWER
SWITCHING



POWER
MONITORING



POWER
CONVERSION



ENERGY
STORAGE



EXPERT
SERVICES

The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimisation
- Consultancy, commissioning and training

A worldwide presence

12 production sites

- France (x3)
- Italy (x2)
- Tunisia
- India
- China (x2)
- USA (x3)

28 subsidiaries and commercial locations

- Algeria • Australia • Belgium • China • Canada
- Dubai (United Arab Emirates) • France • Germany
- India • Indonesia • Italy • Ivory Coast • Netherlands
- Poland • Portugal • Romania • Singapore • Slovenia
- South Africa • Spain • Switzerland • Thailand
- Tunisia • Turkey • UK • USA

80 countries

where our brand is distributed

HEAD OFFICE

SOCOMEK GROUP

SAS SOCOMEK capital 10 589 500 €
R.C.S. Strasbourg B 548 500 149
B.P. 60010 - 1, rue de Westhouse
F-67235 Benfeld Cedex
Tel. +33 3 88 57 41 41 - Fax +33 3 88 57 78 78
info.scp.isd@socomec.com

YOUR DISTRIBUTOR / PARTNER

www.socomec.com

