

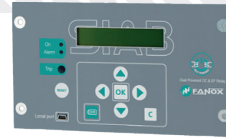
SIA-B

Overcurrent and Earth Fault Protection Relay for Secondary Distribution

Dual & Self Powered / Specific CTs



Main characteristics



- The SIA-B is a Dual & Self powered overcurrent protection relay using the operating current through three specific current transformers fitted on the lines. These transformers are also used to obtain current measurements. Optionally, SIA-B relay can be used with auxiliary power supply (24 Vdc, 110 Vac or 230 Vac). The relay can be occasionally supplied by an external portable adapter (KITCOM).
- Internal commissioning battery as optional.
- Its compact size makes SIA-B really easy to install and its light weight helps the customer to save costs in transport.
- High electromagnetic compatibility (EMC)
- Low power consumption (0.5 W, 24 Vdc).
- Non-volatile RAM memory in order to store up to 100 events and 4 fault reports, without power supply thanks to its internal RTC (Real Time Clock).
- USB connection on the front (Modbus RTU communication protocol).
- Remote communications optional (RS485 Modbus RTU communication protocol).
- There is an optional bistable magnetic indicator which indicates the trip condition, maintaining their position even though the relay loses the supply (flag).
- In self powered modes, SIA-B starts-up from 0.4 Is of primary three phase current using specific CTs.

PROTECTIONS

- 50 Phase instantaneous overcurrent
- 51 Phase inverse time overcurrent
- 50N Neutral instantaneous overcurrent (calculated)
- 51N Neutral inverse time overcurrent (calculated)
- 49T External trip
- 49 Thermal image
- Trip Block for switch disconnector

Specific CTs for SIA-B Relays



TAPED CTs

Special CTs				
Type	Code	*In Range	CT Ratio	Class
CT08-5 Taped	41465	3-33 A	7.2 / 0.075 A	5P80
CT16-5 Taped	41451	6-65 A	14.4 / 0.075 A	5P80

* In is the value of the primary nominal current of the transformer.



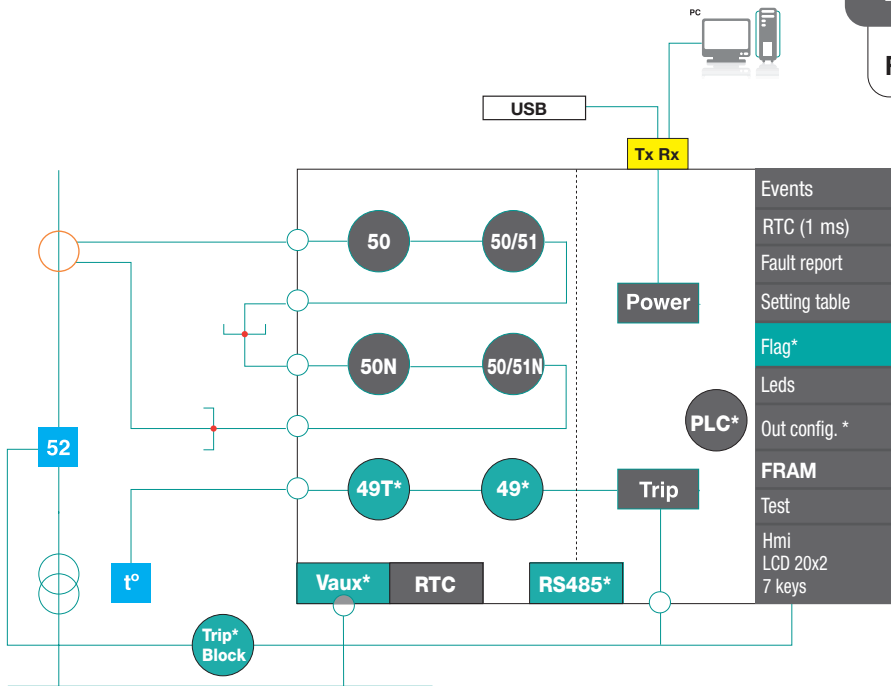
EPOXY RESIN

Special CTs				
Type	Code	*In Range	CT Ratio	Class
CT08-5	41450	3-33 A	7.2 / 0.075 A	5P80
CT16-5	41458	6-65 A	14.4 / 0.075 A	5P80
CT16-10	41452	6-65 A	14.4 / 0.075 A	10P80
CT32-5	41453	12-130 A	28.8 / 0.075 A	5P80
CT64-5	41454	25-260 A	57.6 / 0.075 A	5P80
CT128-5	41455	51-520 A	115.2 / 0.075 A	5P80
CT256-5	41456	102-1040 A	230.4 / 0.075 A	5P80

* In is the value of the primary nominal current of the transformer.

Technical specifications SIA-B

Functions diagram SIA-B

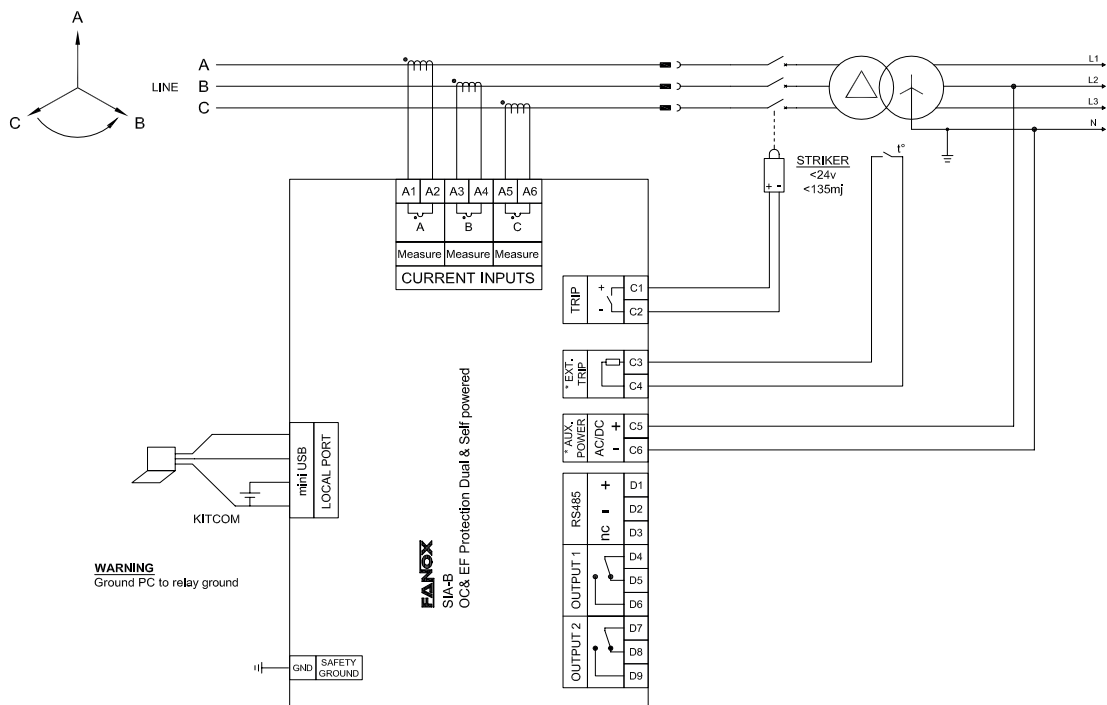


* optional

* Available by default in models including outputs

Connections diagram SIA-B

- 3 CT power supply-measurement Striker



Technical parameters SIA-B and Specific CTs

Function 50	Permission: Yes/No
	Operating range: 0.20 to 20 x Is (step 0.01)
	Operating time: 0.02 to 300 s (step 0.01 s)
	Activation level 100%
	Deactivation level 90%
	Instantaneous deactivation
Function 50N	Permission: Yes/No
	Operating range: 0.20 to 20 x Is (step 0.01)
	Operating time: 0.05 to 300 s (step 0.01s)
	Activation level 100%
	Deactivation level 90%
	Instantaneous deactivation
Function 50/51	Permission: Yes/No
	Operating range: 0.20 to 7 x Is (step 0.01)
	Curves: IEC 60255-151 and ANSI-IEEE
	Operating time: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve IEC long time inverse, ANSI Inverse curve, ANSI very inverse curve, ANSI extremely inverse curve.
	Defined time: 0.02 to 300 s (step 0.01 s)
	Dial: 0.05 to 1.25 (step 0.01)
	Curve, activation level 110%
	Curve, deactivation level 100%
	Defined time, activation level 100%
	Defined time, deactivation level 90%
	Instantaneous deactivation
	Timing accuracy: ± 40 ms or $\pm 5\%$ (greater of both, considering the operating time is influenced by the used CT)
	Function 50/51N
Operating range: 0.20 to 7 x Is (step 0.01)	
Curves: IEC 60255-151 and ANSI-IEEE	
Operating time: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve IEC long time inverse, ANSI Inverse curve, ANSI very inverse curve, ANSI extremely inverse curve.	
Defined time: 0.02 to 300 s (step 0.01 s)	
Dial: 0.05 to 1.25 (step 0.01)	
Curve, activation level 110%	
Curve, deactivation level 100%	
Defined time, activation level 100%	
Defined time, deactivation level 90%	
Instantaneous deactivation	
Timing accuracy: 5% or 40 ms (greater of both, considering the operating time is influenced by the used CT)	

Function 49T (*)	Charging time 7 seconds
Function 49 (*)	Function permission: yes/no
	Tap: 0.10 a 2.40 Is (step 0.01)
	ζ heating: 3 a 600 minutes (step 1 min)
	ζ cooling: 1 a 6 x ζ heating (step 1)
	Alarm level: 20 a 99% (step 1 %)
	Trip level: 100%
Trip Block (*)	Trip reset: 95% of alarm level
	Timing accuracy: $\pm 5\%$ regarding theoretical value
Programmable logic control (PLC)	Blocking: Yes/no
	Blocking limit: 1.5 to 20 x In (step 0.01)
Trip output	OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, AND4, AND4_PULSES, AND4_TIMERUP, AND4_PULSE, AND4_LATCH, NAND4, NAND4_TIMERUP, NAND4_PULSE.
Trip output	24 Vdc; 135 mJ (activation of the striker or low powered coil)
Signalling outputs (*)	2 configurable outputs (output 2 and output 3): 220 Vdc – 8 A (30 W max) 250 Vac – 8 A (62,5 VA max)
Frequency	50/60Hz
Current measure	True RMS
	Sampling: 16 samples/cycle Accuracy depending on the used CT: $< \pm 5\%$ with CT-5 type and $< \pm 10\%$ with CT-10 type
Fault reports / Events	Four fault reports with 24 events per record /100 events
Communication	USB port: Modbus RTU
	*USB (Modbus RTU) + RS485 (Modbus RTU)
Auxiliary supply	230 Vac, $\pm 20\%$
	110 Vac, $\pm 20\%$
	24 Vdc, $\pm 10\%$
Battery supply	With USB KITCOM adapter
	Commissioning internal battery (*)
Self-power from current	Three phase self-power level: $I > 0,4 \times I_s$ min
Environment	Operating temperature: -40 to 70°C
	Storage temperature: -40 to 80 °C
	Humidity: 95%
Transformers	Power supply and measurement specific CTs
Mechanical features	Panel Mounting
	Height x Width Vertical model: 167.80 x 120.65 (mm) Horizontal model: 102.7 x 185.8 (mm)
	Depth Vertical model: 56.2 mm Horizontal model: 59.7 mm
	IP-54 panel mounted

(*) Optional depending on model

Technical parameters EPOXY RESINED CTS

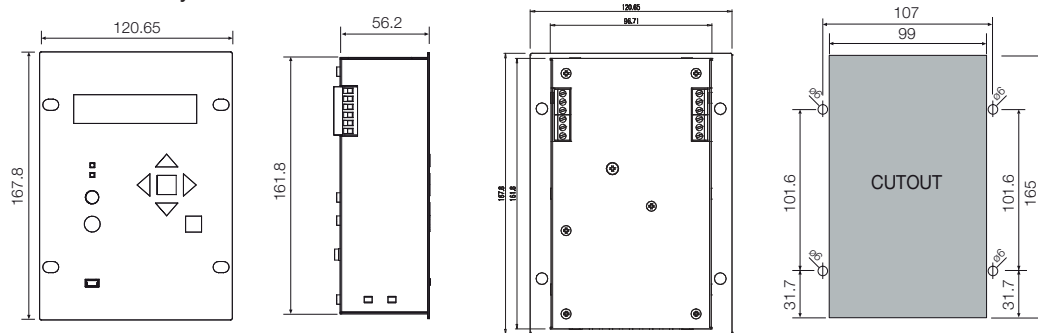
Application	Indoor Use
Class of insulation	Class E
Frequency	50-60 Hz
Ratio	.../ 0,075 A
Primary Conductor	Cable max. \varnothing 50 mm
Sec. wire diameter	Terminal for 6 mm ² solid/ 4 mm ² strand (Wire NOT included)
Test winding	0,288 A Nominal
Burden	0,1 VA
Protection	5P80/10P80
Material	PU & PA6.6

Technical parameters TAPED CTS

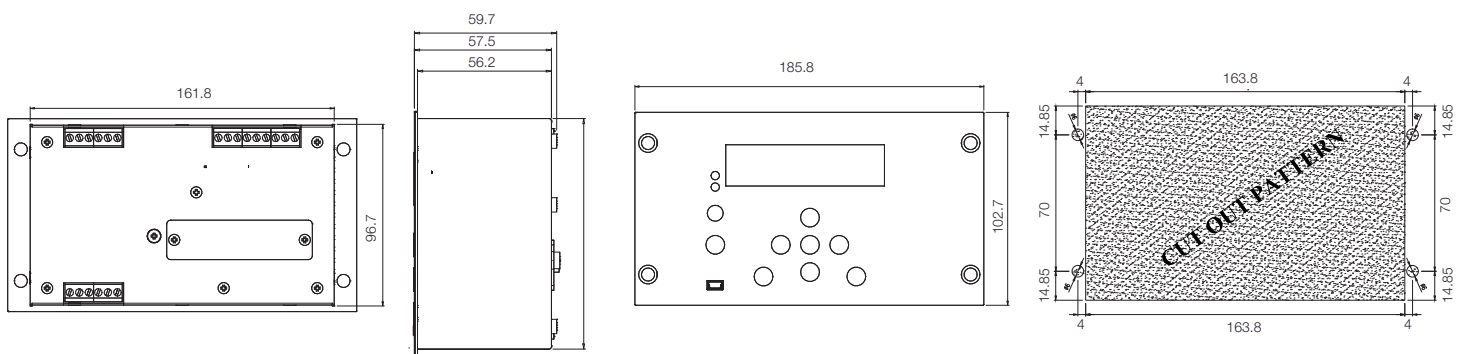
Application	Indoor Use
Class of insulation	Class A
Frequency	50-60 Hz
Ratio	.../ 0,075 A
Primary Conductor	Cable max. \varnothing 75 mm
Sec. wire diameter /length	2,5 mm ² / 3250 mm (Wire included)
Test winding	0,288 A Nominal
Burden	0,05 VA
Protection	5P80

Dimensions and cutout SIA-B

Vertical assembly

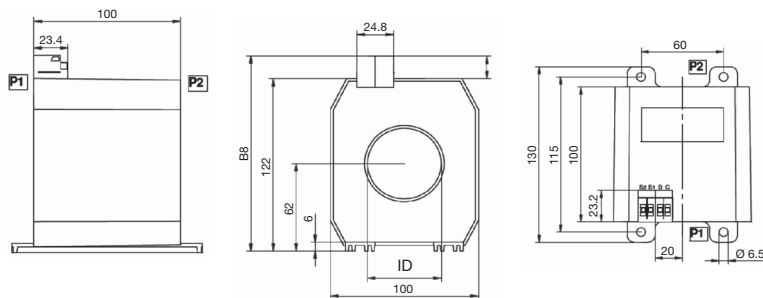


Horizontal assembly



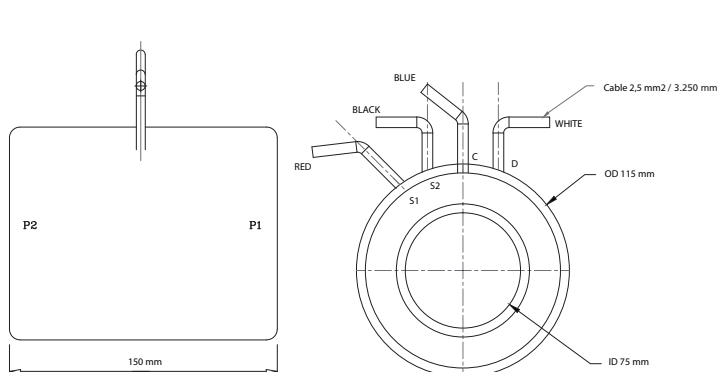
Digital outputs available depending on model.

Epoxy resin CT

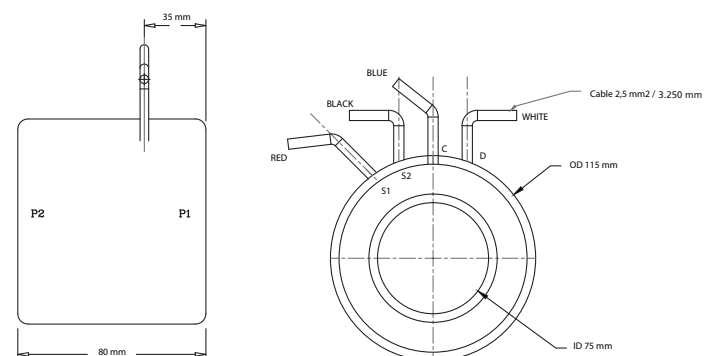


Type	ID (mm)	Code	Range (Is)	Class
CT08-5	45	41450	3-33 A	5P80
CT16-5	50	41458	6-65 A	5P80
CT16-10	50	41452	6-65 A	10P80
CT32-5	50	41453	12-130 A	5P80
CT64-5	50	41454	25-260 A	5P80
CT128-5	50	41455	51-520 A	5P80
CT256-5	50	41456	102-1040 A	5P80

CT08-05 Taped



CT16-05 Taped



Selection & Ordering data
SIA-B

SIA-B	Overcurrent & Earth Fault Protection Relay - Dual & Self Powered										PROTECTION FUNCTIONS
	0										50 + 50/51 + 50N + 50/ 51N
		0									PHASE MEASUREMENT Defined by General Settings
			0								NEUTRAL MEASUREMENT Internal measurement
											NET FREQUENCY Defined by General Settings
				0 1 2 3 A B C D							POWER SUPPLY Self powered Self powered + 230 Vac (Dual) Self powered + 110 Vac (Dual) Self powered + 24 Vdc (Dual) Self powered + Commissioning battery Self powered + 230 Vac (Dual) + Commissioning battery Self powered + 110 Vac (Dual) + Commissioning battery Self powered + 24 Vdc (Dual) + Commissioning battery
					0 1 B						ADDITIONAL FUNCTIONS - + 49 + Trip Block for switch disconnecter
						0 1					COMMUNICATIONS USB (Modbus RTU) USB (Modbus RTU) + RS485 (Modbus RTU)
							0 1 2				INPUTS-OUTPUTS Trip (striker) Trip (striker) + External trip input (49T) + 1 magnetic indicator Trip (striker) + External trip input (49T) + 1 magnetic indicator + 2 outputs
								0 1			MECHANICAL ASSEMBLY Vertical Assembly Horizontal Assembly
									A B C D		LANGUAGE English, Spanish and German English, Spanish and Turkish English , Spanish and French English , Spanish and Russian
										A	ADAPTATION -

Example of ordering code:

SIA B	0	0	0	0	1	0	1	0	B	A	<i>SIAB00001010BA</i>
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