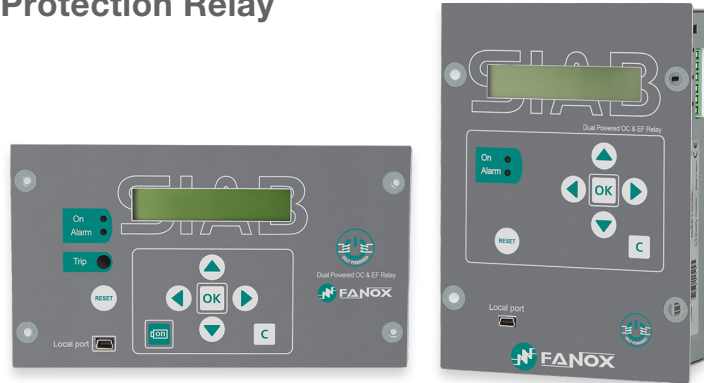


SIA-B Specific CT's

SELF POWERED TECHNOLOGY



Reliable OC&EF Dual & Self Powered Protection Relay



Overcurrent and Earth Fault Protection Relay

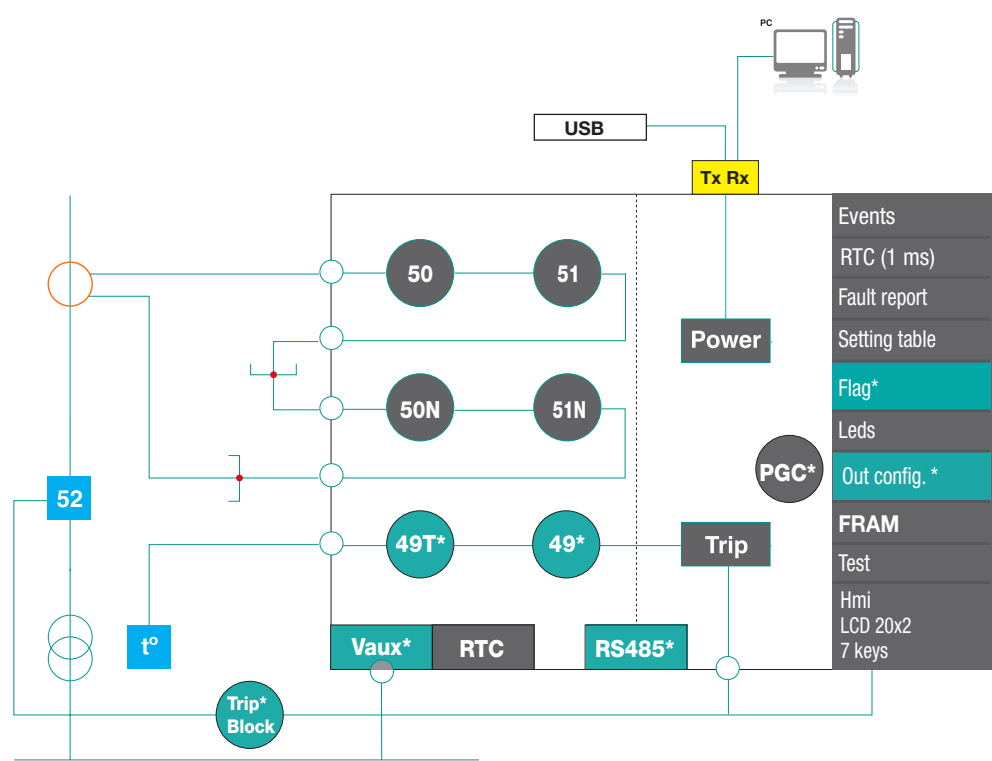
Secondary Distribution Protection, RMUs, MRMU's and SF6 insulated Switchgears

- Dual & Self powered OC&EF protection relay using the operating current through specific current transformers.
- Stores up to 100 events and DFR (4 fault reports in data format) in non-volatile RAM memory.
- 1 input, LEDs and Configurable outputs thanks to Programmable Logic Control (PGC).
- Test menu allows the trip circuit to be tested before the transformation center is powered up.
- Bistable magnetic indicator which indicates the trip condition, maintaining its position even though the relay loses the supply (flag).
- Self diagnosis of the status (WATCHDOG) through led.
- Internal Commissioning battery as optional. (Lithium battery: 20 years lifetime).
- High electromagnetic compatibility.
- Low power consumption.
- In Self powered mode, SIA-B starts-up from 0.4 times of primary three phase current.
- USB front port connection (ModBus RTU protocol) for local communication. Remote communication through rear RS485 (ModBus RTU)
- Its compact size makes SIA-B really easy to install and its light weight helps the customer to save costs in transport.

ANSI CODES PROTECTION	
50	Instantaneous phase overcurrent
51	Inverse time phase overcurrent
50N	Instantaneous calculated neutral overcurrent
51N	Inverse time calculated neutral overcurrent
49T	External trip
49	Thermal overload
TB	Trip block for switch disconnector
PGC	Programmable logic control



Functions diagram SIA-B



Technical parameters SIA-B

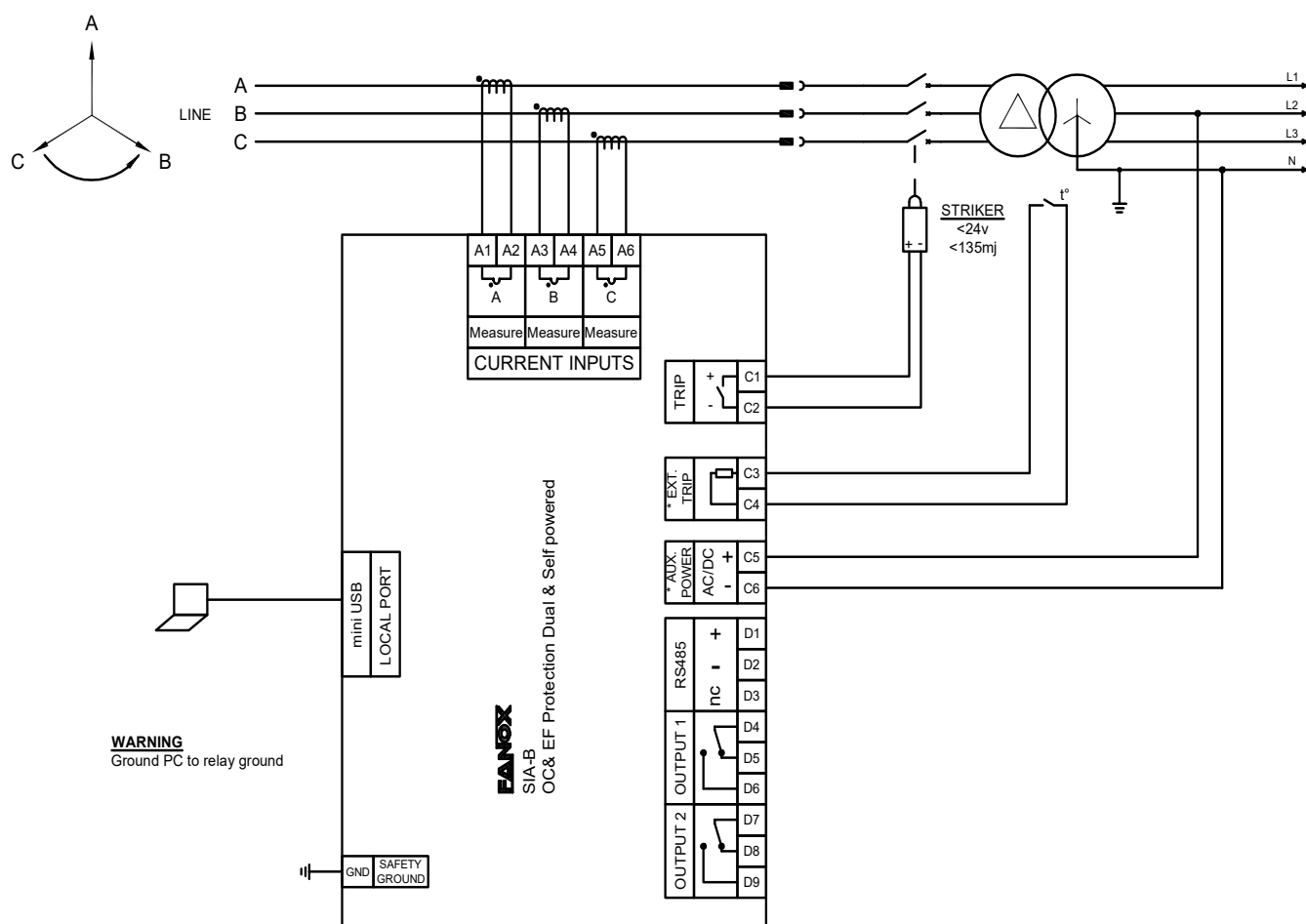
Function 50	Function Enable: yes/no
	Operating range: 0.20 to 20 x Is (step 0.01)
	Operating time: 0.02 to 300 s (step 0.01 s)
	Activation level 100%
	Deactivation level 90%
	Instantaneous deactivation
	Timing accuracy: ± 40 ms or $\pm 0.5\%$ (greater of both)
Function 50N	Function Enable: yes/no
	Operating 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
	Timing accuracy: ± 40 ms or $\pm 0.5\%$ (greater of both)
Function 51	Function Enable: yes/no
	Operating range: 0.20 to 7 x Is (step 0.01)
	Curves: IEC 60255-151 and IEEE
	Operating time: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve IEC long time inverse, IEEE Inverse curve, IEEE very inverse curve, IEEE 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 51N	Function Enable: yes/no
	Operating range: 0.20 to 7 x Is (step 0.01)
	Curves: IEC 60255-151 and IEEE
	Operating time: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve IEC long time inverse, IEEE Inverse curve, IEEE very inverse curve, IEEE 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 Enable: 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 reset: 95% of alarm level
Trip Block (*)	Timing accuracy: $\pm 5\%$ regarding theoretical value
	Blocking: Yes/no
Programmable logic control (PGC)	Blocking limit: 1.5 to 20 x In (step 0.01)
	OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, NOR4_PULSES, 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: $\leq \pm 5\%$ with CT-5 type and $\leq \pm 10\%$ 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

Connections diagram SIA-B

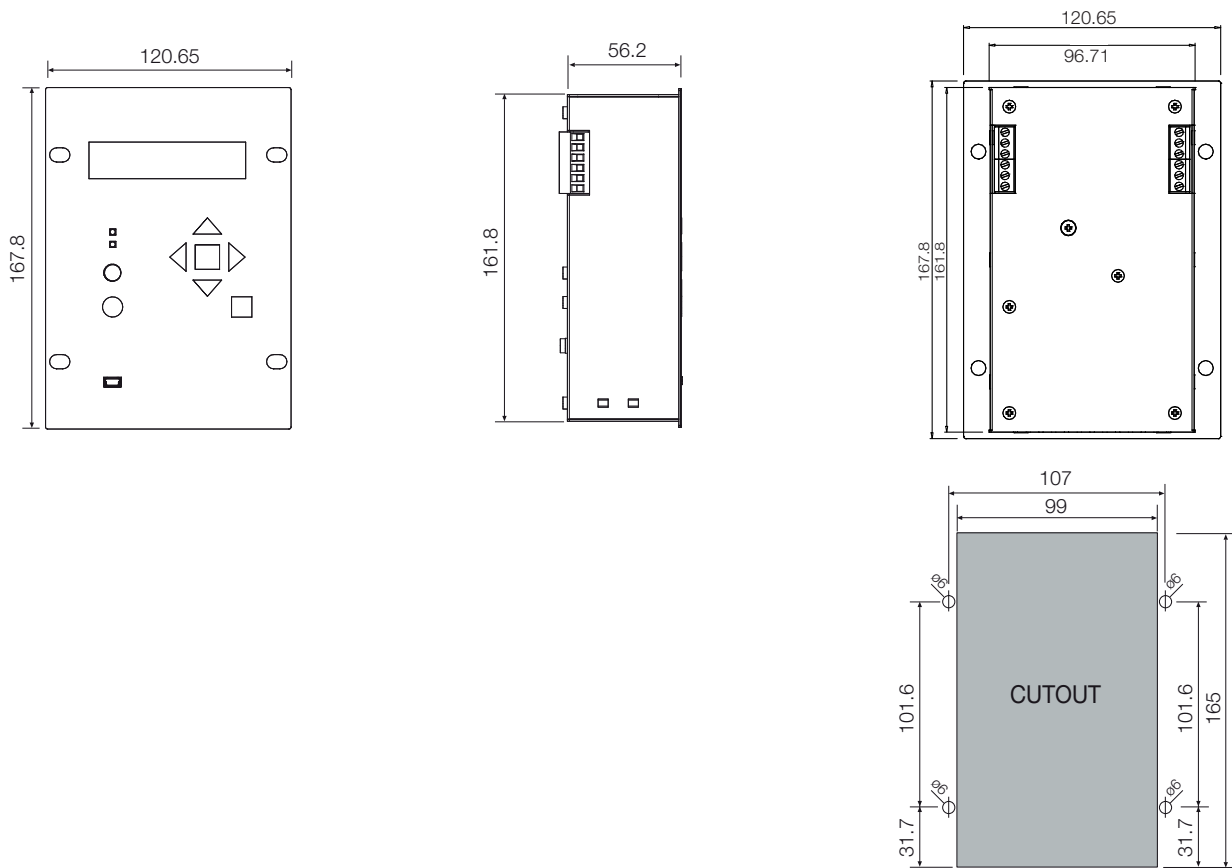
- 3 CT power supply-measurement
- Striker
- Solid neutral



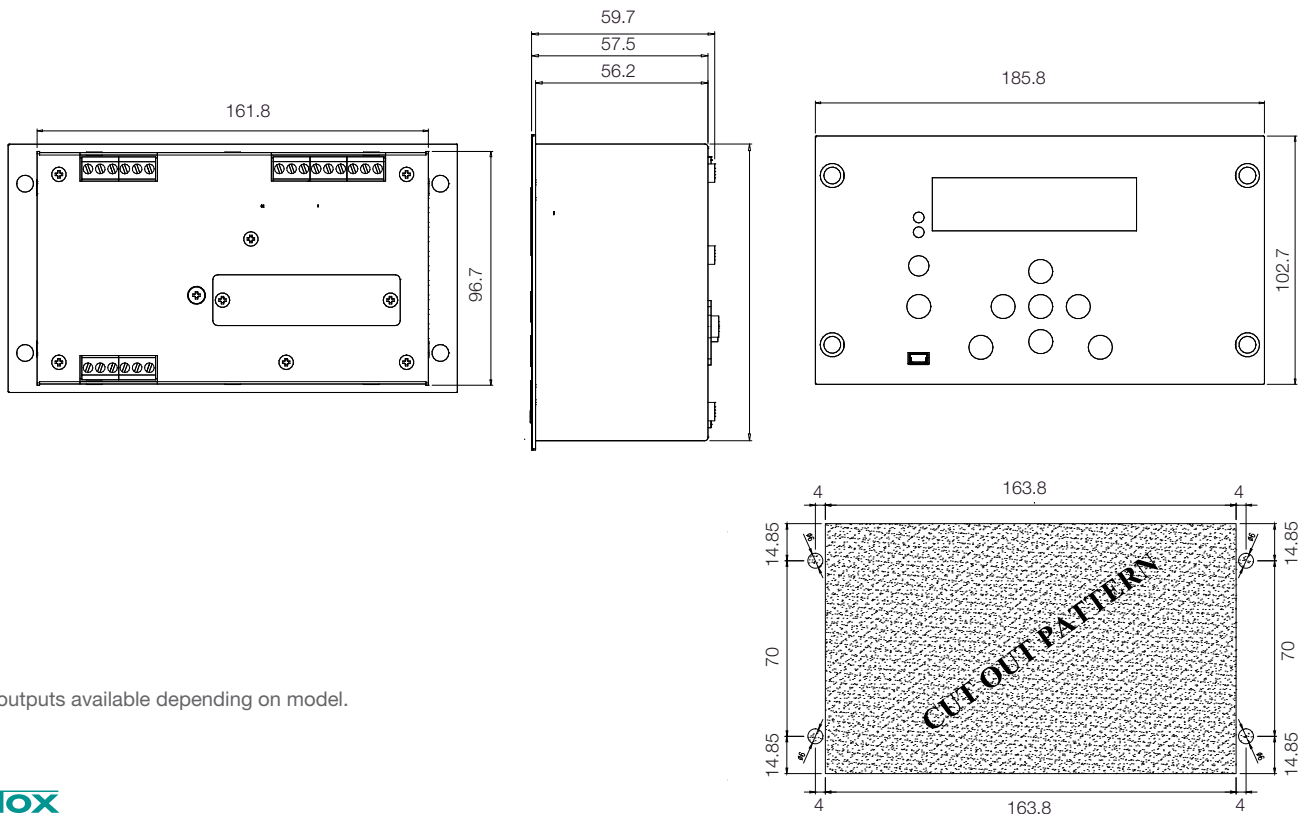
(*) Example of connections diagram

Dimensions and cutout SIA-B

Vertical assembly



Horizontal assembly



Digital outputs available depending on model.

Selection & Ordering data SIA-B

SIA-B	Overcurrent & Earth Fault Protection Relay – Dual & Self Powered										
0											PHASE CURRENT MEASUREMENT Defined by General Settings
	0										NEUTRAL CURRENT MEASUREMENT Internal measurement
		0									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 AND 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 4 5				MECHANICAL ASSEMBLY Vertical Assembly Horizontal Assembly Vertical Assembly with anticorrosive treatment Horizontal Assembly with anticorrosive treatment
								A B C D			LANGUAGE English, Spanish and German English, Spanish and Turkish English, Spanish and French English, Spanish and Russian
									A		ADAPTATION 50 + 51 + 50N + 51N

Example of ordering code:

SIA-B	0	0	0	0	1	0	1	0	B	A
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SIA B 0 0 0 0 1 0 1 0 B A