



Overcurrent & Earth Fault Protection / Dual & Self Powered

Secondary Distribution Protection Relay





SIA-B

FANOX

Overcurrent & Earth Fault Protection Relay for Secondary Distribution

Dual & Self Powered / Standard CTs







PROTECTIONS

- 50 Instantaneous phase overcurrent
- 50/51 Inverse time phase overcurrent
- 50G Instantaneous Neutral overcurrent
- 50/51G Inverse time neutral overcurrent
 - 46 Negative Sequence instant. overcurrent
 - 49 Thermal image
 - CLP Cold Load Pick-up
 - SHB Second Harmonic Blocking
 - 50BF Circuit Breaker opening failure
 - 52 Circuit Breaker monitoring
 - 49T External trip
 - TB Trip Block protection

Main characteristics

- The SIA-B is an overcurrent protection relay with self powered and dual powered (Self-powering + Auxiliary power) options.
- The relay is self powered using the operating current through three /1 (<2VA) standard current transformers fitted on the lines. These transformers are also used to obtain current measurements. Besides, SIA-B relay can be used with auxiliary power supply (24-230 Vac/dc). The relay can be also supplied by a USB cable connected to the laptop, with the USB KITCOM adapter or an standard power bank.



Multiple options for powering and communication

- Internal commissioning battery included. (Lithium battery: 20 years lifetime).
- 50_1, 50/51, 50G_1, 50/51G, 49, SHB, PGC protection functions.
- Micro USB front port connection (Modbus RTU protocol) for local communication. Remote communication through rear RS485 port (Modbus RTU or DNP 3.0 selectable by general setting) as optional.
- 49T function available through configurable inputs.
- 52 function to control the state of the circuit breaker.
- 50_2, 50G_2, CLP, 46, 50BF and trip block for switch disconnector as optional.
- Specific test menu is provided.
- High electromagnetic compatibility.
- The installation and subsequent maintenance of external batteries is eliminated. The operating costs of the centre are reduced.
- Really low start-up levels: 75 mA in three phase system /160 mA in single phase system.
- The line opening mechanism is activated by means of a striker PRT, operated by the energy supplied by the relay.
- There are 4 configurable LEDs. When the relay is switched off, their previous states can be checked by powering the relay up (by self-powering the relay, through USB cable, auxiliary voltage or pressing commissioning battery).



• The SIA-B is fitted with the demand of current (load data profiling) with the following characteristics:

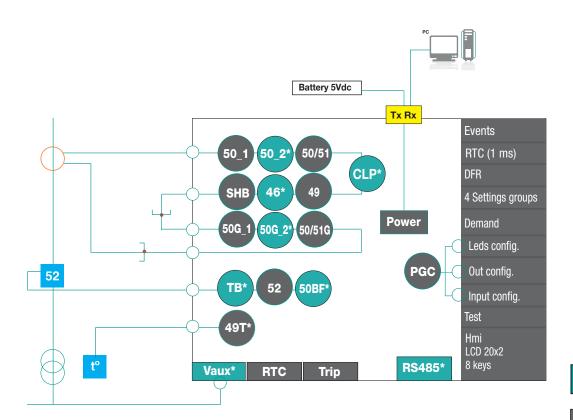
Number of records: 168 Recording mode circular

Sampling rate (interval): configurable through

communications: 1 – 60 min.

 Non-volatile RAM memory in order to store up to 1.024 events, disturbance fault recording (DFR- 20 fault reports and 10 oscillographic records in COMTRADE format), maintaining date & time thanks to its internal RTC (Real Time Clock) even without power supply.

Functions diagram SIA-B



* optional

*Available through configurable inputs



Technical parameters SIA-B

	Function English Vos /No /OUD				
	Function Enable: Yes/No/SHB				
	Current Tap: 0.07 to 20 x ln (step 0.01 x ln)				
	Time Delay: 0.02 to 300 s (step 0.01 s)				
Function 50_1	Activation level 100% Deactivation level 95%				
Function 50_2 (*)	Instantaneous deactivation				
	Timing accuracy: Without SHB permitted: ± 30 ms or ± 0.5% (greater				
	of both).				
	With SHB permitted: ± 50 ms or ± 0.5% (greater of				
	both). Function Enable: Yes/No/SHB				
	Current Tap: 0.05 to 10 x In (step 0.01 x In) Time Delay: 0.02 to 300 s (step 0.01 s)				
	Activation level 100%				
Function 50G_1	Deactivation level 95%				
	Instantaneous deactivation				
Function 50G_2 (*)	Timing accuracy:				
	Without SHB permitted: ± 30 ms or ± 0.5% (greater				
	of both).				
	With SHB permitted: ± 50 ms or ± 0.5% (greater of both).				
	Function Enable: Yes/No/SHB				
	Current Tap: 0.07 to 7 x ln (step 0.01 x ln)				
	Curves: IEC 60255-151 and IEEE				
	Time Delay: 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 (TMS): 0.01 to 1.5 (step 0.01)				
Function 50/51	Curve, activation level 110%				
	Curve, deactivation level 100%				
	Defined time, activation level 100%				
	Defined time, deactivation level 95%				
	Instantaneous deactivation				
	Timing accuracy:				
	Without SHB permitted: ± 30 ms or ± 5% (greater				
	of both). With SHB permitted: \pm 50 ms or \pm 5% (greater of				
	both).				
	Function Enable: Yes/No/SHB				
	Current Tap: 0.05 to 7 x In (step 0.01 x In)				
	Curves: IEC 60255-151 and IEEE				
	Time Delay: 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 (TMS): 0.01 to 1.5 (step 0.01)				
Function 50/51G	Curve, activation level 110%				
	Curve, deactivation level 100%				
	Defined time, activation level 100%				
	Defined time, deactivation level 95%				
	Instantaneous deactivation				
	Timing accuracy:				
	Without SHB permitted: ± 30 ms or ± 5% (greater				
	of both).				
	With SHB permitted: \pm 50 ms or \pm 5% (greater of both).				
	55.19.				

Function Enable: yes/no Tap: 0.10 to 2.40 xln (step 0.01) ⟨ heating: 3 to 600 minutes (step 1 min) ⟨ cooling: 1 to 6 x ⟨ heating (step 1) Alarm level: 20 to 99% (step 1 %) Trip level: 100% Trip level: 20 to 99% (step 1 %) Trip level: 95% of alarm level Timing accuracy: ± 5% regarding theoretical value Function SHB Function Enable: Yes/No Function SHB Function Enable: Yes/No Maximum accumulated amps: 0 to 100000 (step 1) Maximum accumulated amps: 0 to 100000 (step 1) Maximum closing time 0.02 to 30 s (step 0.01 s) Excessive repeated openings: 1 to 10000 (step 1) Maximum closing time 0.02 to 30 s (step 0.01 s) Excessive repeated openings: 1 to 10000 (step 1) Repetitive openings/time: 1 to 300 min (step 1 min) Function Enable: Yes/No Settings group: 1 to 4 (step 1) No load time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) ClP reset threshold: 80 mA Function Enable: Yes/No/SHB Function Enable: Yes/No/SHB Current Tap: 0.10 to 7.00 xln (step 0.01) Curve siEC 60255-151 and iEEE Time Delay:: iEC Inverse curve, iEC very inverse curve iEC long time inverse, iEEE inverse c						
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Alarm level: 20 to 99% (step 1 %) Trip level: 100% Trip reset: 95% of alarm level Timing accuracy: ± 5% regarding theoretical value Function SHB		ζ heating: 3 to 600 minutes (step 1 min)				
Alarm level: 20 to 99% (step 1 %) Trip level: 100% Trip reset: 95% of alarm level Timing accuracy: ± 5% regarding theoretical value Function SHB		ζ cooling: 1 to 6 x ζ heating (step 1)				
Trip reset: 95% of alarm level	Function 49	Alarm level: 20 to 99% (step 1 %)				
Timing accuracy: ± 5% regarding theoretical value		Trip level: 100%				
Function SHB		Trip reset: 95% of alarm level				
Function SHB		'				
Reset Time: 0.00 to 300 s (step 0.01 s)						
Reset Time: 0.00 to 300 s (step 0.01 s)	Function SHB	Current Tap: 5% to 50% (step 1%)				
Function 52 Maximum number of openings: 1 to 10000 (step 1) Maximum accumulated amps: 0 to 100000 (M(A²)) (step 1) Maximum opening time 0.02 to 30 s (step 0.01 s) Maximum closing time 0.02 to 30 s (step 0.01 s) Excessive repeated openings: 1 to 10000 (step 1) Repetitive openings/time: 1 to 300 min (step 1 min) Function Enable: Yes/No Settings group: 1 to 4 (step 1) No load time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Enable: Yes/No/SHB Current Tap: 0.10 to 7.00 xln (step 0.01) Curves IEC 60255-151 and IEEE Time Delay:: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve IEC long time inverse, IEEE inverse curve IEC long time inverse, IEEE inverse curve, IEEE very inverse curve. Defined time: 0.02 to 300 s (step 0.01 s) Dial (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 18IP BLOCK (*) Blocking: Yes/No Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.01 s) Dial time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA Programmable logic control (PGC) ANDA_TIMERUP, ANDA_PULSES, ORA_TIMERUP, NORA_PULSES, NORA_PULSES, NORA_PULSES, NORA_PULSES, NORA_NORA_TIMERUP, NORA_PULSES, NORA_PULSES, NORA_NORA_TIMERUP, NORA_PULSE, NORA_NORA_TIME		· · · · · · ·				
Function 52 Maximum accumulated amps: 0 to 100000 (M(A²) (step 1) Maximum opening time 0.02 to 30 s (step 0.01 s) Maximum closing time 0.02 to 30 s (step 0.01 s) Excessive repeated openings: 1 to 10000 (step 1) Repetitive openings/time: 1 to 300 min (step 1 min) Function Enable: Yes/No Settings group: 1 to 4 (step 1) No load time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Enable: Yes/No/SHB Current Tap: 0.10 to 7.00 xln (step 0.01) Curves IEC 60255-151 and IEEE Time Delay:: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve IEC long time inverse, IEEE inverse curve IEC long time: 0.02 to 300 s (step 0.01 s) Dial (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 18IP BLOCK (*) Blocking: Yes/No Blocking: Yes/No Blocking: Yes/No Blocking: Yes/No Dopen circuit breaker activation threshold: 60 mA Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, NOR4_PULSES, NOR4_NOR4_TIMERUP, NOR4_PULSES, NOR4_PULSES, NOR4_NOR4_TIMERUP, NOR4_PULSES, NOR4_PULSES, NOR4_NOR4_TIMERUP, NOR4_PULSES, NOR4_PULSES, NOR4_NOR4_TIMERUP, NOR4_PULSE, NOR4_NOR4_T		, , ,				
Function 52 Maximum opening time 0.02 to 30 s (step 0.01 s) Maximum closing time 0.02 to 30 s (step 0.01 s) Excessive repeated openings: 1 to 10000 (step 1) Repetitive openings/time: 1 to 300 min (step 1 min) Function Enable: Yes/No Settings group: 1 to 4 (step 1) No load time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) Cold Load Time: 0.02 to 300 s (step 0.01 s) CLP activation threshold: 60 mA CLP reset threshold: 80 mA Function Enable: Yes/No/SHB Current Tap: 0.10 to 7.00 xln (step 0.01) Curves IEC 60255-151 and IEEE Time Delay:: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve, IEC fong 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 (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 95% Instantaneous deactivation Function 49T Function 49T Function 50BF (*) Function 50BF (*) Programmable logic control (PGC) Programmable logic control (PGC) ANAL TIMERUP, ANAL PULSE, ORA, TIMERUP, ORA, PULSE, NORA, PULSE, NORA, NORA, TIMERUP, NANDA, PULSE, NANDA, NANDA, NANDA, TIMERUP, NANDA, PULSE, NANDA, NANDA, NANDA, TIMERUP, NANDA, PULSE, NANDA, NANDA, NANDA, PULSE, NANDA, NANDA, NANDA, TIMERUP, NANDA, PULSE, NANDA, NANDA, PULSE, NANDA, NANDA, NANDA, TIMERUP, NANDA, PULSE, NANDA, NANDA, NANDA, NANDA, NANDA, TIMERUP, NANDA, PULSE, NANDA, NANDA, NANDA, NANDA, TIMERUP, NANDA, PULSE, NANDA, NANDA, NANDA, NANDA, PULSE, NANDA, NANDA, NANDA, PULSE, NANDA, NANDA, NANDA, PULSE, NANDA, NANDA, PULSE, NANDA, NANDA, PULSE, NANDA, NANDA, PULSE, NAND		, , ,				
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CLP activation threshold: 60 mA CLP reset threshold: 80 mA Function Enable: Yes/No/SHB Current Tap: 0.10 to 7.00 xln (step 0.01) Curves IEC 60255-151 and IEEE Time Delay:: 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 (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, NOR4_PULSES, AND4_TIMERUP, NOR4_PULSES, AND4_TIMERUP, NOR4_PULSES, AND4_TIMERUP, NOR4_PULSES, AND4_PULSE, NAND4_NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault Disturbance Fault	Function CLP (*)	` ' '				
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Curves IEC 60255-151 and IEEE Time Delay:: IEC Inverse curve, IEC very inverse curve, IEC extremely inverse curve, IEE very inverse curve, IEEE extremely inverse curve. IEEE very inverse curve, IEEE extremely inverse curve. Defined time: 0.02 to 300 s (step 0.01 s) Dial (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Programmable logic control (PGC) Programmable logic control (PGC) Available through configurable inputs Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Programmable logic control (PGC) Available through configurable inputs Blocking: Yes/No Blocking: Yes/No Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Available through configurable inputs Blocking: Yes/No Blocking: Yes/No Blocking: Yes/No Blocking: Hinter 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, NOR4_PULSES, AND4, NOR4_TIMERUP, NOR4_PULSES, NOR4_PULSES, AND4_AND4_LATCH, AND4_PULSES, NOR4_PULSES, AND4_AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NAND4_PULSES, AND4_NAND4_TIMERUP, NAND4_PULSES, AND4_NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault Disturbance Fault						
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Function 46 (*) Function 46 (*) Defined time: 0.02 to 300 s (step 0.01 s) Dial (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Programmable logic control (PGc) Programmable logic control (PGc) Return 1024 events Disturbance Fault Inverse curve, IEEE extremely inverse curve. Defined time: 0.02 to 300 s (step 0.01) Curve, activation level 100% Defined time, activation level 95% Instantaneous deactivation Programmable logic inputs Blocking: Yes/No Blocking: Yes/No Dening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, AND4_NOR4_PULSES, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, AND4_PULSES, AND4_NOR4_PULSES, AND4_NOR4_PULSES, AND4_NOR4_PULSES, AND4_NOR4_PULSES, AND4_PULSES, AND4_NOR4_PULSES, AND4_PULSES, AND4_PULSE		curve, IEC extremely inverse curve IEC long				
Function 46 (*) Defined time: 0.02 to 300 s (step 0.01 s) Dial (TMS): 0.01 to 1.5 (step 0.01) Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Programmable logic control (PGC) Programmable logic control (PGC) Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault Disturbance Fault						
Curve, activation level 110% Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Programmable logic control (PGC) Programmable Settings groups 4 Settings groups Available through configurable inputs Blocking: Yes/No Dening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, NOR4_PULSES, AND4, NOR4_TIMERUP, NOR4_PULSES, NOR4_PULSES, AND4_AND4_LATCH, AND4_PULSES, AND4_TIMERUP, AND4_PULSES,	Function 46 (*)					
Curve, deactivation level 100% Defined time, activation level 100% Defined time, deactivation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Programmable logic control (PGC) Programmable Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault Curve, deactivation level 100% Defined time, activation level 95% Instantaneous deactivation Programmable Blocking: Yes/No Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Disturbance Fault Disturbance Fault		Dial (TMS): 0.01 to 1.5 (step 0.01)				
Defined time, activation level 100% Defined time, deactivation level 95% Instantaneous deactivation Function 49T Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4_PULSES, AND4, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NOR4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, AND4_PULSE, NAND4_PULSES, AND4_PULSE, AND4_PULSES, AND4_PULSES		Curve, activation level 110%				
Defined time, deactivation level 95% Instantaneous deactivation Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Prunction 50BF (*) Programmable logic control (PGC) Programmable logic control (PGC) Blocking limit: 1.5 to 20 x ln (step 0.1) Function Enable: yes/no Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NAND4_LATCH, AND4_PULSES, AND4_LATCH, AND4_PULSES, AND4_NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault Disturbance Fault 20 fault reports, 16 events in each		Curve, deactivation level 100%				
Instantaneous deactivation Available through configurable inputs Blocking: Yes/No Blocking limit: 1.5 to 20 x In (step 0.1) Function 50BF (*) Function 50BF (*) Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSES, AND4_TIMERUP, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NAND4_PULSE, NAND4_NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault Disturbance Fault 20 fault reports, 16 events in each		Defined time, activation level 100%				
Function 49T Available through configurable inputs Blocking: Yes/No Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, NOR4, NOR4_TIMERUP, NOR4_PULSES, NOR4_NOR4_TIMERUP, NOR4_PULSES, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NAND4_PULSES, AND4_PULSES,		Defined time, deactivation level 95%				
Function TRIP BLOCK (*) Blocking: Yes/No Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Programmable logic control (PGC) Settings groups Positive Settings groups Blocking: Yes/No Programmable: yes/no Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, AND4, NOR4_TIMERUP, NOR4_PULSES, AND4_TIMERUP, AND4_PULSE, NAND4, NAND4_TIMERUP, NAND4_PULSES, AND4_PULSES, AND4_PULSE, NAND4, NAND4_TIMERUP, NAND4_PULSES, AND4_TIMERUP, AND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault 20 fault reports, 16 events in each		Instantaneous deactivation				
BLOCK (*) Blocking limit: 1.5 to 20 x ln (step 0.1) Function 50BF (*) Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4_PULSES, AND4, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NOR4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, VAND4_PULSES, AND4_PULSES, AND4_PUL	Function 49T	Available through configurable inputs				
Function 50BF (*) Function 50BF (*) Opening fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, NOR4, NOR4_TIMERUP, NOR4_PULSES, NOR4_NOR4_LATCH, AND4_PULSES, AND4, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NAND4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSE, NAND4_PULSES, AND4_PULSES, AND4	Function TRIP	Blocking: Yes/No				
Programmable logic control (PGC) Settings groups Pending fault time: 0.02 to 1.00 s (step 0.01 s) Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, NOR4_PULSES, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault 20 fault reports, 16 events in each	BLOCK (*)	Blocking limit: 1.5 to 20 x In (step 0.1)				
Open circuit breaker activation threshold: 60 mA OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NOR4_PULSE, NAND4_TIMERUP, AND4_PULSE, NAND4_NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault 20 fault reports, 16 events in each		Function Enable: yes/no				
Programmable logic control (PGC) OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, NOR4_NOR4_TIMERUP, NOR4_PULSES, AND4_AND4_LATCH, AND4_PULSES, AND4_TIMERUP, NAND4_PULSE, NAND4, NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault OR4, OR4_LATCH, OR4_PULSES, OR4_TIMERUP, OR4_PULSES, AND4_NOR4_PULSES, AND4_NAND4_TIMERUP, NAND4_PULSE. Settings groups: 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault 20 fault reports, 16 events in each	Function 50BF (*)	•				
Programmable logic control (PGC) OR4_PULSE, NOR4, NOR4_TIMERUP, NOR4_PULSE, NOR4_PULSES, AND4, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, AND4_PULSE, NAND4, NAND4_TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault 20 fault reports, 16 events in each		Open circuit breaker activation threshold: 60 mA				
Programmable logic control (PGC) NOR4_PULSES, AND4, AND4_LATCH, AND4_PULSES, AND4_TIMERUP, AND4_PULSE, NAND4, NAND4_ TIMERUP, NAND4_PULSE. Settings groups 4 Settings groups: Activated by inputs or by general settings Events Disturbance Fault 20 fault reports, 16 events in each						
AND4_TIMERUP, AND4_PULSE, NAND4, NAND4_ TIMERUP, NAND4_PULSE. Settings groups						
Settings groups 4 Settings groups: Activated by inputs or by general settings Events 1024 events Disturbance Fault 20 fault reports, 16 events in each	logic control (PGC)	AND4_TIMERUP, AND4_PULSE, NAND4, NAND4_				
Events 1024 events Disturbance Fault 20 fault reports, 16 events in each						
Disturbance Fault 20 fault reports, 16 events in each						
Treoditaing (B11)						
	ooranig (Di II)					



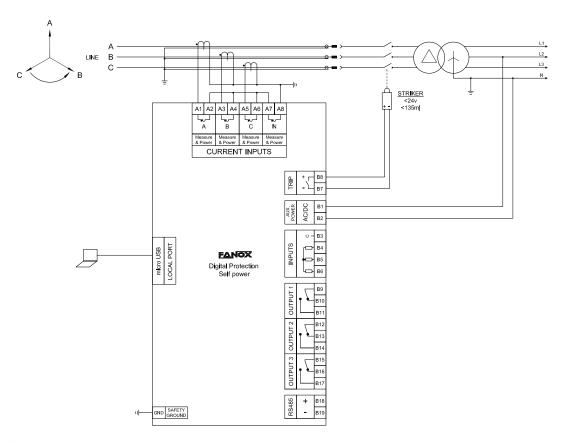
Technical parameters SIA-B

	Demand of current with the following characteristics:			
	Number of records: 168			
	Recording mode circular			
	 Sampling rate (interval): configurable through communications: 1 – 60 min 			
	Record format:			
Load Data Profiling (Current	Date/Time			
Demand)	IMAX (in interval)			
	IMAX (actual)			
	IA			
	IB			
	IC			
	IN			
Trip output	For Striker: 24 Vdc-135 mJ			
	3 changeover outputs (output 1, output 2 and output 3):			
Signaling outputs	250 Vac - 8 A 220 Vdc - 8 A			
Signaling inputs	3 inputs: They are activated by short-circuiting the terminals without external supply			
Frequency	Selectable by general settings			

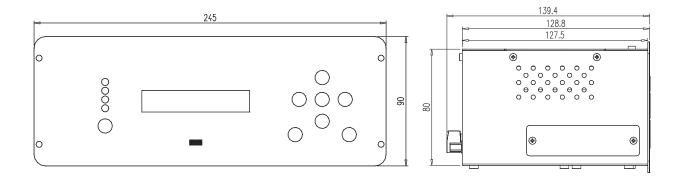
	Fundamental values (DFT)				
Current	Sampling: 16 samples/cycle				
measurement	Accuracy of $\pm 2\%$ on a band of $\pm 20\%$ over the nominal current and $\pm 4\%$ or ± 5 mA (greater of both) over the rest of the range.				
Communication	Micro USB front port: Modbus RTU				
Communication	RS485 port: Modbus RTU or DNP3.0 Serial (*)				
Power supply	24-230 Vac/dc -20% + 10%				
D-H	With USB KITCOM adapter or standard power bank				
Battery supply	Internal commissioning battery				
Self-power from	Three phase self-power level:				
current	I > 75mA				
	Operating temperature: -40 to 70°C				
Environment	Storage temperature: -40 to 80 °C				
	Humidity: 95%				
Transformers	Power supply and measurement CT /1				
	Metallic box				
	Panel Mounting				
Mechanical features	Height x Width: 90 x 245 (mm)				
	Depth: 139.4 (mm)				
	IP-54				
Weight	3 Kg.				

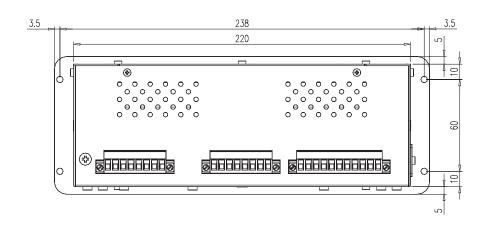
Connections diagram SIA-B

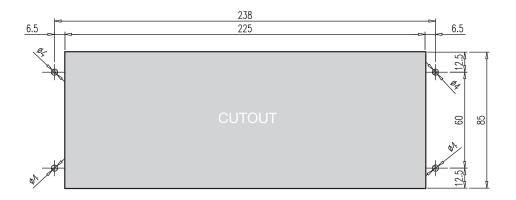
- 3 CT power supply-measurement
- Rigid neutral













Selection & Ordering data SIA-B

SIA-B		Ove						rotec	tion		PROTECTION FUNCTIONS
טוא-ט			Rela	y - C	oual 8	k Self	Pow	ered			50_1 + 50/51 + 50G_1 + 50/51G + PGC
											PHASE MEASUREMENT
	1										In= 1 A: (0.10 - 30.00 A)
		1									NEUTRAL MEASUREMENT
		'									In= 1 A: (0.05 - 16.00 A)
			0								NET FREQUENCY
											Defined by General Settings
											POWER SUPPLY
				Α							Self-powered + Commissioning battery
				F							Self-powered + 24-230 Vac/dc (Dual) + Commissioning battery
											ADDITIONAL FUNCTIONS
					С						+ 49 + SHB + 4 Settings groups + LDP + DFR + 52
					D						+ 49 + SHB + 4 Settings groups + LDP + DFR + 52 + 46 + Trip Block for switch disconnector + 50_2 + 50G_2 + CLP + 50BF
											COMMUNICATIONS
						0					USB (Modbus RTU)
						2					USB (Modbus RTU) + RS485 (Modbus RTU or DNP3.0 Serial)
											INPUTS AND OUTPUTS
							3				4 LEDs + Trip (Striker) + 3 Outputs + 3 Inputs
											MECHANICAL ASSEMBLY
								2			Extended Horizontal Assembly
											LANGUAGE
									Α		English, Spanish and German
									В		English, Spanish and Turkish
									С		English , Spanish and French
									D		English , Spanish and Russian
											ADAPTATION
										С	Standard CTs /1
ample	e of ord	dering o	code:								
IA B	1	1	0	F	С	0	3	2	Α	С	SIA B 1 1 0 F C 0 3 2 A C



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