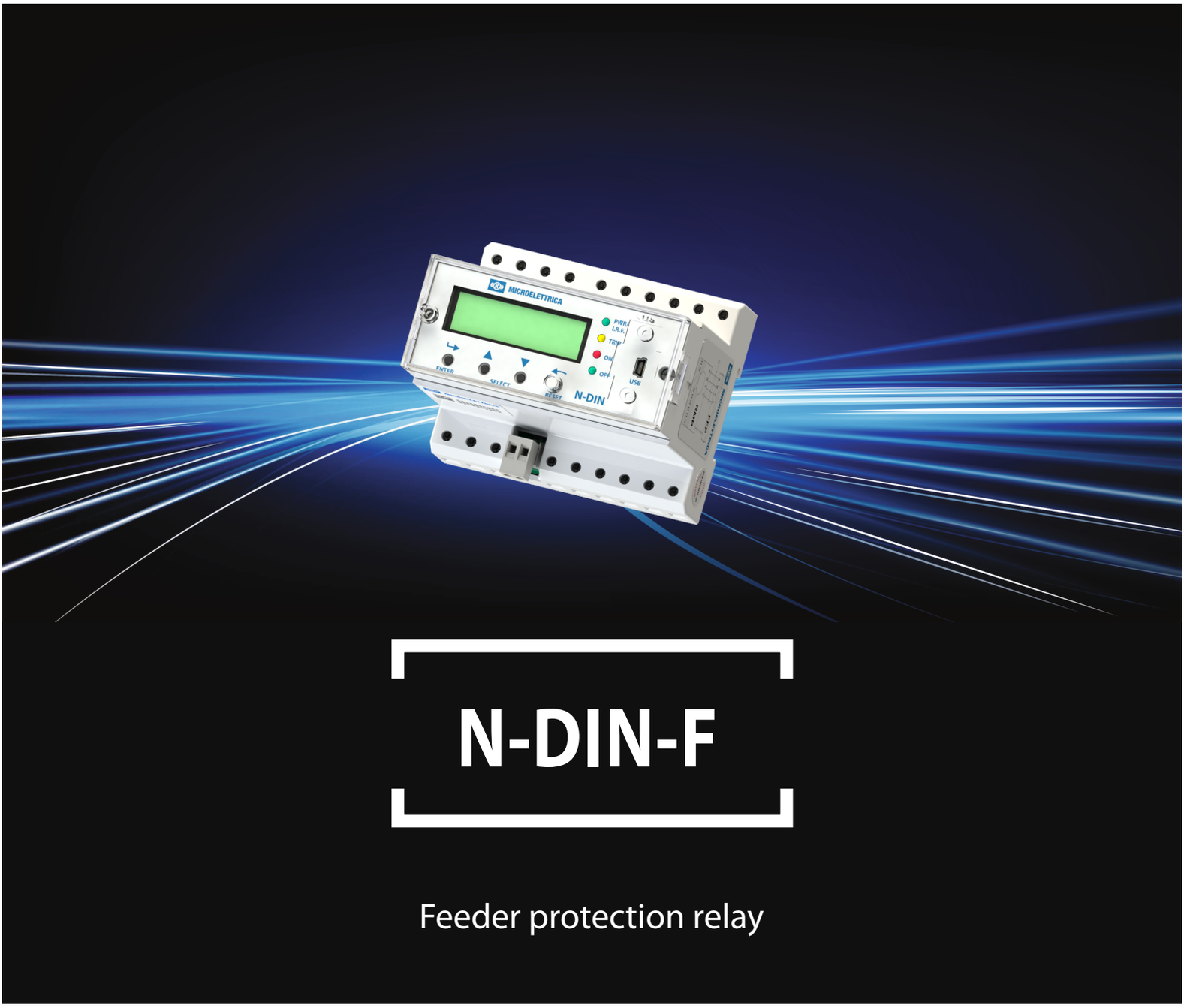


N-DIN-F

Feeder protection relay

Features

The N-DIN relay has been conceived to obtain the most efficient space/performance as well as cost/ performance ratio.

The N-DIN relay is surface mounted on standard DIN-EN 50022 rail, but its Front-Face Panel (FFP) including Controls, Signals and Display, is removable and can be flush mounted, apart from the Relay Main Body (RMB), on the front panel of the switch board or of the MCC drawers. When removed, the FFP is connected to the RMB via a through a dedicated serial link by a normal wire and screw terminals.

One single FFP can control and supervise up to 31 RMB units.

Another RS232 port is available on the FFP front for local connection to a PC. Similarly the RMB, besides the Serial Port connecting the FFP, has another RS485 serial port, with screw terminals, for connection to the serial bus of the DCS. The relay main body RMB can be used as a stand-alone unit, without the front panel FFP.

Communication protocol is MODBUS-RTU for all the Ports, whereas the communication with the Expansion Module EX-I/O is done on CanBus Protocol (dedicated terminals 1,2 and 3).

The technical specifications reported are not binding and they should be agreed in the related contract.

MICROELETTRICA

The Relay Main Body (RMB) Includes

2 Phase input CTs for current measurement from 0.05A to 50A
1 Neutral (Earth Fault) input CT for current measurement from 0.01A to 10A
2 Self powered programmable Digital Inputs for remote controls (start, stop, reverse, ecc)
1 RTD input
2 Programmable output relays each with one N.O. contact rating 6A
1 RS485 Serial port for connection to the communication serial bus.
1 RS485 port for communication to the Front Face Panel.
Communication protocol is MODBUS-RTU for all the Ports.
2 Signal Leds
1 Reset button

Power Supply Ratings

Isolated multivoltage autoranging Power Supply input: two options available
Type 1 : 24V(-20%) / 80V(+15%)a.c. - 24V(-20%) / 90V(+20%)d.c.
Type 2 : 80V(-20%) / 230V(+15%)a.c. - 90V(-20%) / 250V(+20%)d.c.

The front face panel (FFP) includes

2 x 16 characters LCD display for real time measurements of input quantities
programming and reading-out of relay settings, event discrimination etc....
Four Key buttons for local relay management
Four signal leds
One RS232 (USB) port for connection to a local PC (on front side)
One RS485 port for interconnection with the RMB (on back side)

Measurements

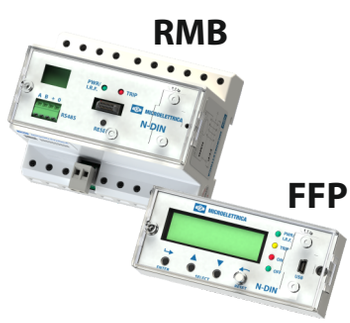
Measurement of true r.m.s. of input currents (IA, IB, IC, I0).
Measurement of the Negative Sequence Current (I2).
Load Profile recording.
Trip and Operation Counters.
Event recording with value of the parameters at the moment of tripping and time tagging.
Display of programmed parameter settings.

Protection functions

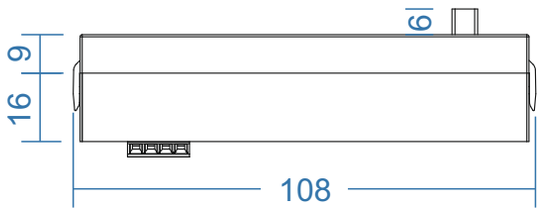
F49 - Thermal Image Alarm + Trip.
F46 - Independent Definite time Unbalance.
F50/51 - Phase Fault:
- 1 Level programmable of Definite Time or Inverse or Very Inverse or Extremely Inverse.
- 1 Level programmable Independent Definite Time (<30)

F50N/51N - Earth Fault Protection:
- 1 Level programmable of Definite Time or Inverse or Very Inverse or Extremely Inverse.
- 1 Level programmable Independent Definite Time

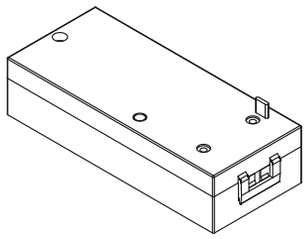
F51BF - Breaker Failure.

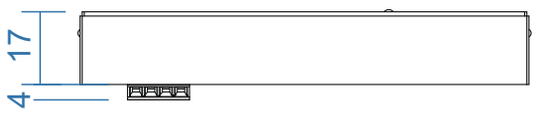


FFP - Overall Dimensions (mm)



With Cover





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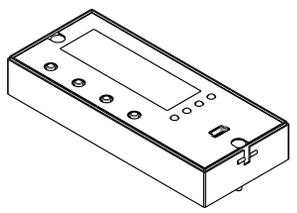
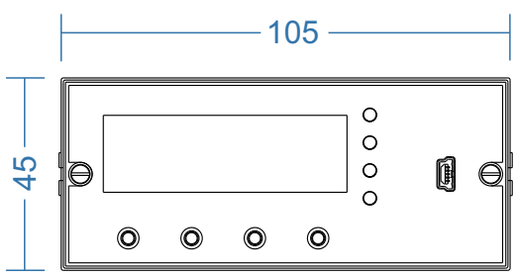
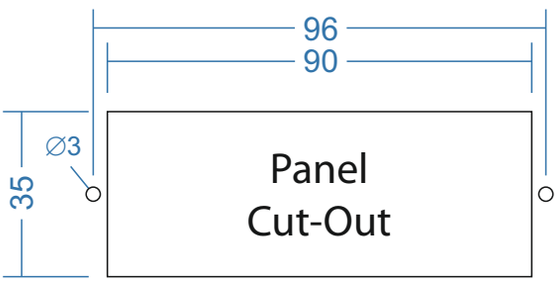
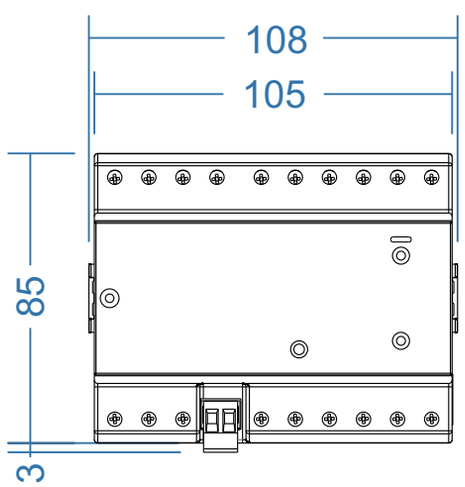






RMB - Overall Dimensions (mm)



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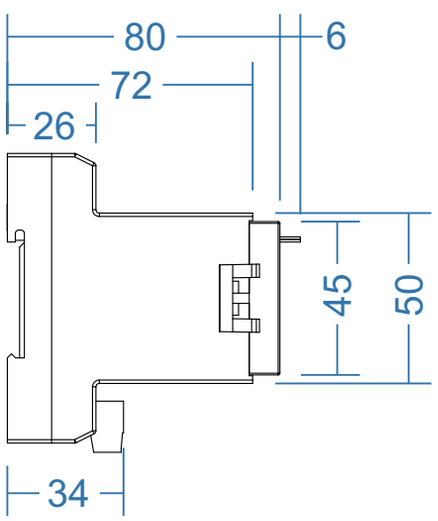

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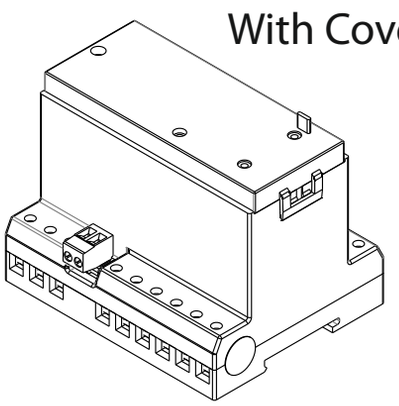

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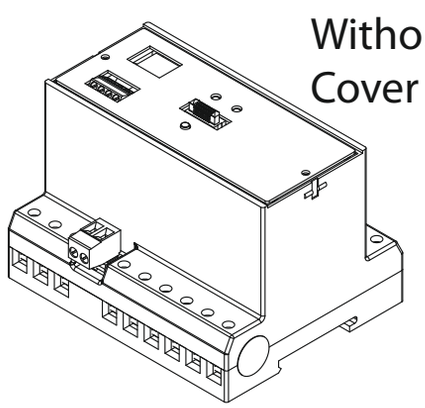
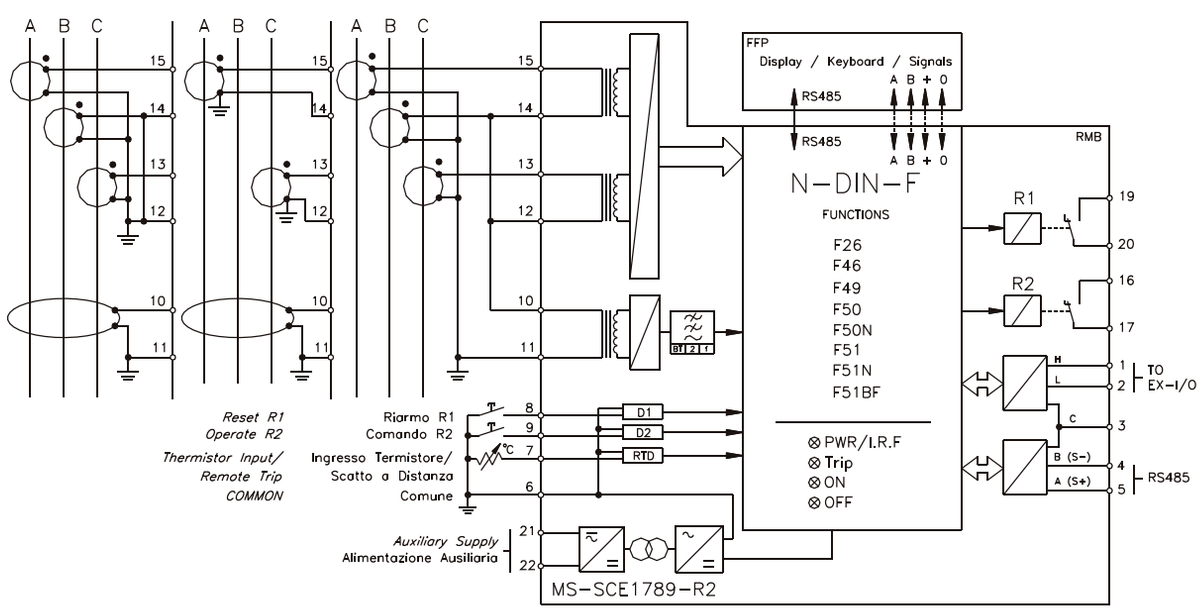


Approval : CE				
Reference Standards IEC 60255 - EN50263 - CE Directive - EN/IEC61000 - IEEE C37				
Dielectric test voltage	IEC 60255-5		2kV, 50/60Hz, 1 min.	
Impulse test voltage	IEC 60255-5		5kV (c.m.), 2 kV (d.m.) - 1,2/50µs	
Insulation resistance			>100 M	
Environmental Std. Ref. (IEC 60068-2-1 - 68-2-2 - 68-2-33)				
Operation ambient temperature			-10 C / +55 C	
Storage temperature			-25 C / +70°C	
Humidity	IEC60068-2-3		RH 93% Without Condensing at 40°C	
CE EMC Compatibility (EN61000-6-2 - EN61000-6-4 - EN50263)				
Electromagnetic radiated and conducted emission	EN55022		industrial environment	
Radiated electromagnetic field immunity test	IEC61000-4-3	level 3	80-1000MHz	10V/m
	ENV50204		900MHz/200Hz	10V/m
Conducted disturbances immunity test	IEC61000-4-6	level 3	0.15-80MHz	10V
Electrostatic discharge test	IEC61000-4-2	level 3	6kV contact / 8kV air	
Power frequency magnetic test	IEC61000-4-8		1000A/m, 50/60Hz	
Pulse magnetic field	IEC61000-4-9		1000A/m, 8/20µs	
Damped oscillatory magnetic field	IEC61000-4-10		100A/m, 0.1-1MHz	
Electrical fast transient/burst	IEC61000-4-4	level 3	2kV, 5kHz	
HF disturbance test with damped	IEC60255-22-1	class 3	400pps, 2,5kV (c.m.), 1kV (d.m.)	
oscillatory wave (1MHz burst test)				
Oscillatory waves (Ring waves)	IEC61000-4-12	level 4	4kV(c.m.), 2kV(d.m.)	
Surge immunity test	IEC61000-4-5	level 4	2kV(c.m.), 1kV(d.m.)	
Voltage interruptions	IEC61000-4-29		0% 50ms	
Resistance to vibration and shocks	IEC60255-21-1 - IEC60255-21-2 - 10-500Hz 1g			
Typical Characteristics				
Rated Current	In = 1/5A Programmable - On = 1/5A Programmable			
Metering range	(0.01 - 50)A			
Current overload	200A for 1 sec; 10A continuous			
Burden on current inputs	Phase : 3mW/phase for 5A (0.075VA @ 5A)			
	Neutral: 10mW/phase for 1A (0.01VA @ 1A)			
Auxiliary power supply	Type 1 - Type 2			
Average power supply consumption	≤7 VA			
Output relays	rating 6 A; Vn = 250 V			
Software interface	MSCom			

Connection Diagram



N-DIN-F

Order Code	Auxiliary Voltage (Vaux)	Component
NF1100000C	24V(-20%) / 80V(+15%)ac - 24V(-20%) / 90V(+20%)dc	Remote + Main Unit
NF1200000C	80V(-20%) / 230V(+15%)ac - 90V(-20%) / 250V(+20%)dc	Remote + Main Unit

Spare Parts

Order Code	Auxiliary Voltage (Vaux)	Component
NF1100000M	24V(-20%) / 80V(+15%)ac - 24V(-20%) / 90V(+20%)dc	Main Unit (RMB)
NF1200000M	80V(-20%) / 230V(+15%)ac - 90V(-20%) / 250V(+20%)dc	Main Unit (RMB)
NF1000000R	----------	Remote Unit (FFP)

The technical specifications reported are not binding and they should be agreed in the contract.

For further technical information on our products visit www.microelettrica.com

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