



N-DIN-F

FEEDER PROTECTION RELAY

The N-DIN relay has been conceived to obtain the most efficient space and performance as well as cost and 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 dedicated serial link by a normal wire and screw terminals. One FFP only 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.

Technical Characteristics

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, rev., 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
- 2 Signal Leds
- 1 Reset button

The Front Face Panel (FFP) Includes:

- 2 x 16 characters LCD display
- Four Key buttons for local relay management
- Four signal leds
- One RS232 port for connection to a local PC (on front side)
- One RS485 port for interconnection with the RMB (on back side)
- Complete autodiagnostic program

Protective Functions

- F46 : One Current Unbalance
- F49 : One Thermal Image Alarm + Trip
- F51 : Two Phase-Fault elements
- F50N/51N : Two Earth Fault elements
- F51BF : Breaker Failure protection

Measurements

- Real Time Measurements (IA - IB - IC - Io - I2)
- Trip Recording (last 5 trips with date & time)
- Load Profile recording

Power Supply Ratings

- Autoranging multivoltage power supply
- 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.

Mounting

- DIN46227 (EN50022)

Programmable Input Quantities

In : Rated primary current of phase CTs	: (1 ÷ 6500)A	step 1A
On : Rated primary current of earth fault detection CT0	: (1 ÷ 6500)A	step 1A
Fn : System frequency	: (50 ÷ 60)Hz	

1F - 50/51 (I>): First Overcurrent Element

Function enabling	: Enable/Disable	
Current setting range	: I> = (20 ÷ 400)%In	step 1%In
Definite trip time delay	: tI> = (0.05 ÷ 60)s	step 0.01s
Time current curves	: Indep.Definite Time (D), IEC (A / B / C)	

2F - 50/51 (I>>): Second Overcurrent Element

Function enabling	: Enable/Disable	
Current setting range	: I>> = (20 ÷ 999)%In	step 1%In
Definite trip time delay	: tI>> = (0.05 ÷ 60)s	step 0.01s

1F - 64 (Io>): First Earth Fault Element

Function enabling	: Enable/Disable	
Current setting range	: Io> = (20 ÷ 9999)mAs	step 1mAs
Definite trip time delay	: tIo> = (0.05 ÷ 60)s	step 0.01s
Time current curves	: Indep.Definite Time (D), IEC (A / B / C)	

2F - 64 (Io>>): Second Earth Fault Element

Function enabling	: Enable/Disable	
Current setting range	: Io>> = (20 ÷ 9999)mAs	step 1mAs
Definite trip time delay	: tIo>> = (0.05 ÷ 60)s	step 0.01s

F49 (T>): Thermal Image element with prealarm

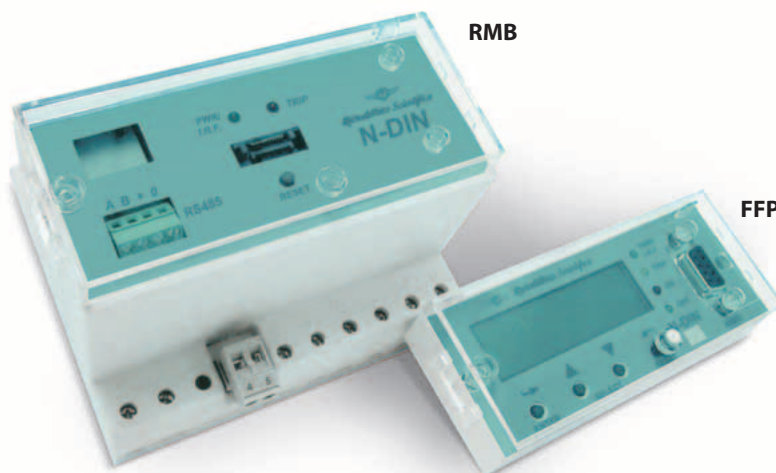
Function enabling	: Enable/Disable	
Temperature prealarm	: TaI = (50 ÷ 110)%Tn	step 1 %Tn
Reset level	: Tst = (10 ÷ 100)%Tn	step 1 %Tn
Time constant	: tw = (1 ÷ 60)min	step 1min

F46 (I2>): Current Unbalance (negative sequence current) Element

Function enabling	: Enable/Disable	
Current setting range	: I2> = (10 ÷ 99)%In	step 1%In
Definite trip time delay	: tI2> = (0.1 ÷ 60)s	step 0.1s

Breaker Failure Element

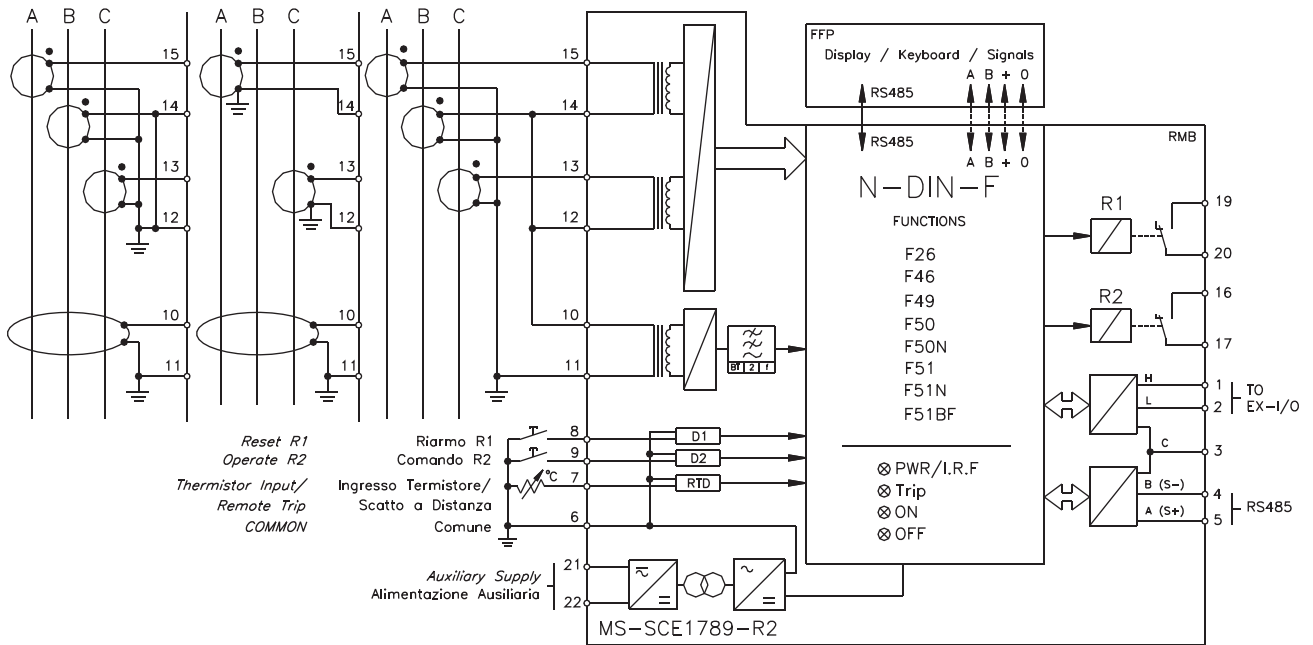
Trip time delay	: tBF = (0.05 ÷ 0.75)s	step 0.01s
-----------------	------------------------	------------



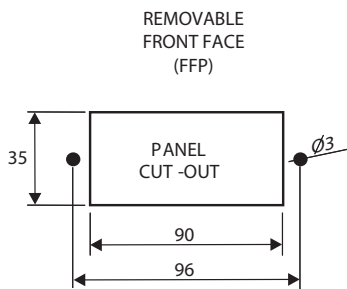
Electronics

N-DIN-F

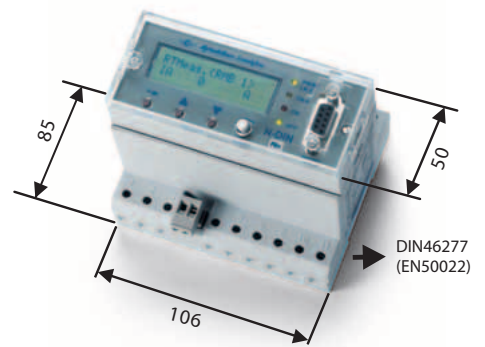
Connection Diagram



Overall Dimensions (mm)



FFP
Height= 16



RMB
Height= 72

Electronics

N-DIN-F

Typical Characteristics

Rated Current	In = 1/5A Programmable - On = 1/5A Programmable
Metering range	(0.01 ÷ 50)A
Current overload	200 A for 1 sec; 10A continuous
Burden on current inputs	Zf = 3mW/phase for 5A (0.075VA @ 5A) Zo = 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

Order code - Example :

N-DIN-F	1	1
	Power Supply	Relay
	1 = Type 1	1 = Standard (RMB+FFP)
	2 = Type 2	2 = Only RMB
		3 = Only FFP

The performances and the characteristics reported in this document are not binding and can modified at any moment without notice.



Microelettrica Scientifica S.p.A. - 20089 Rozzano (MI) - Via Alberelle 56/58 Italy
Tel. +39 02 575731 - Fax +39 02 57510940 - E-Mail: sales.relays@microelettrica.com
www.microelettrica.com