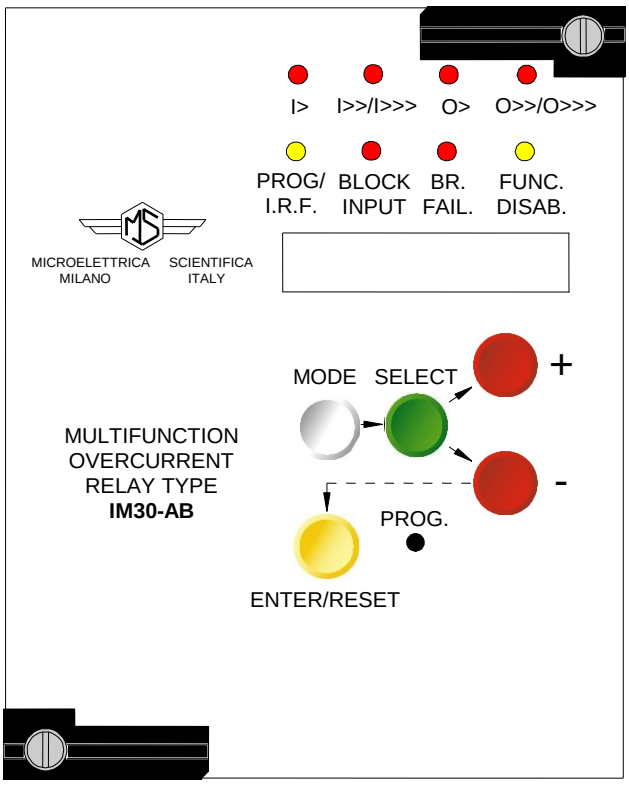
MICROPROCESSOR OVERCURRENT AND EARTH FAULT PROTECTION RELAY

TYPE
IM30-AB

OPERATION MANUAL

Addendum

For version with IRIG-B Time synchronization



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2.3.1 - Clock synchronization.

The clock can be synchronized via the IRIG-B digital input (terminals 1 – 14) or the serial communication interface. By programming the variable (T_{syn} = 5', 10', 15', 30', 60', IRGI-B, Dis) the Synchronization is made in different ways :

T_{syn} = Dis	:	The current date can only be modified manually either via the front panel keyboard (SETTING MENU) or via the serial communication interface (programming mode).
T_{syn} = IRIG-B	:	The clock is automatically updated by the IRIG-B input signal.
T_{syn} = 5', 10', 15', 30', 60'	:	The clock is updated via the serial interface as follows

The unit expects to receive a sync signal at the beginning of every hour and once every T_{syn} minutes. When a sync signal is received, the clock is automatically set to the nearest expected synchronization time.
For example: if T_{syn} is 10min and a sync signal is received at 20:03:10 January the 10th, 98, then the clock is set to 20:00:00 January the 10th, 1998. On the other hand, if the same sync signal were received at 20:06:34, the clock would be set to 20:10:00, January the 10th 98.
Note that if a sync signal is received exactly in the middle of a T_{syn} period, the clock is set to the previous expected synchronization time.

7. DIGITAL INPUTS

Three digital inputs are provided: they are active when the relevant terminals are shorted

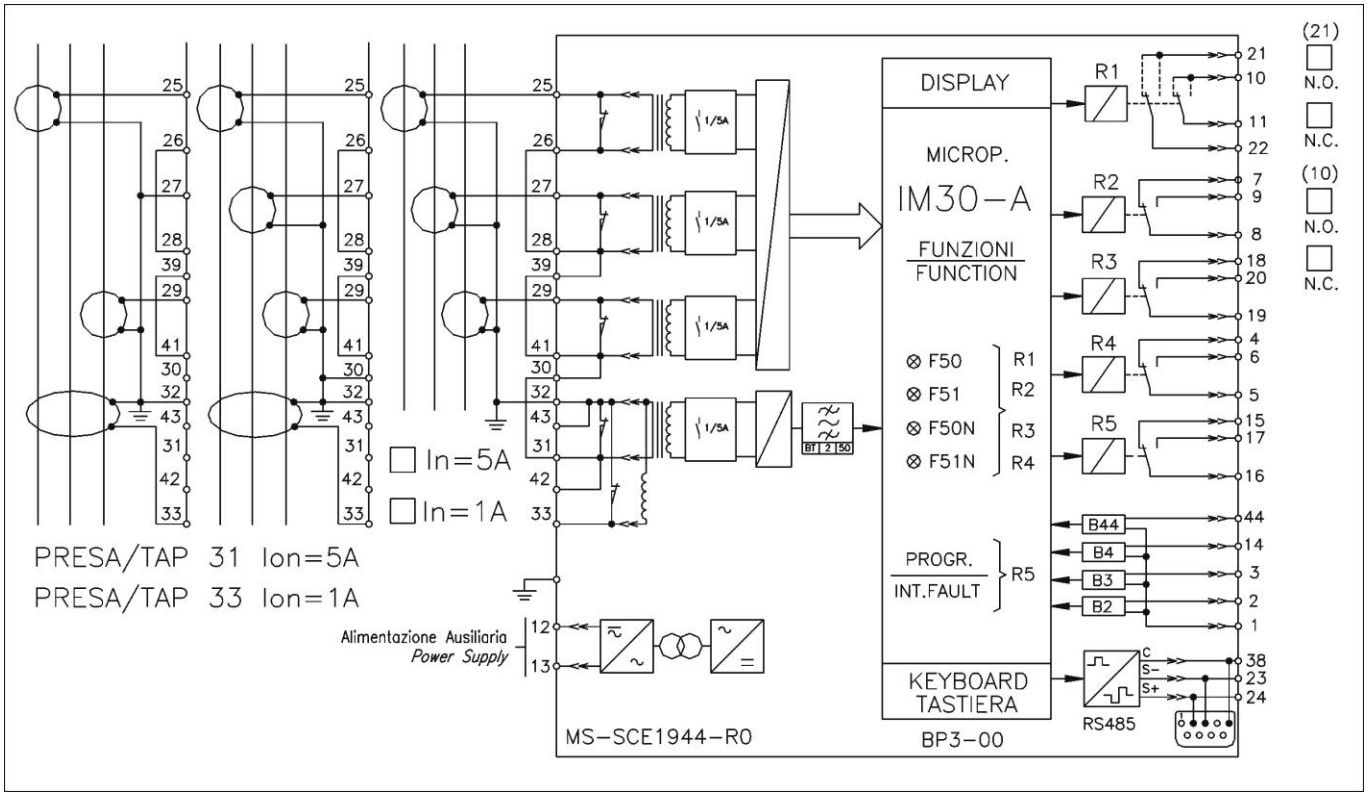
❑	**B2** (terminals 1 - 2)	:	it blocks the operation of the time delayed elements for to phase fault detection.
❑	**B3** (terminals 1 - 3)	:	it blocks the operation of the time delayed elements for to earth fault detection.
❑	**B4** (terminals 1 - 14)	:	Another optoisolated input is available for a IRIG-B time Synchronisation input from GPS – Accuracy 10ms – Time Synchronization can also be made via serial communication interface (see § 2.3.1) **ATTENTION!** Connection of a GPS system to the IRIG-B input must be made through a proper adapter device supplied on request as optional.
❑	**B44** (terminals 1 - 44)	:	Switching-over from Setting Program 1 (SP1) to Setting Program 2 (SP2) - Terminals 1 – 44 Open = Setting Program 1 active - Terminals 1 – 44 Shorted = Setting Program 2 active The input B4 can also be activated via the serial communication port. In this case Switching-back from SP2 to SP1 can only be made via serial port. Viceversa if the terminals 1 – 44 are shorted, switching-back from SP2 to SP1 cannot be made via the serial port.

When a function is blocked the pick-up of its time delayed output is inhibited. Programming allows to have the inhibition either permanent as long as the blocking input is active (tB2=Dis; tB3=Dis) or automatically removed after the expiry of the set trip time delay of the function involved plus an additional time 2tBF (tB2=2tBF; tB3=2tBF). By proper interconnection of the blocking inputs and outputs of different relays it is possible to configurate very efficient arrangements of logic fault discrimination as well as to feature a safe and quick breaker back-up protection.

12.1 - PROGRAMMING OF FUNCTIONS SETTINGS

Tsyn	Dis	**m**	Synchronization Time Expected time interval between sync. pulse.	5 - 60 – IRIG-B - Dis	5-10 15-30 IRIG-B 60-Dis	m

17. CONNECTION DIAGRAM (SCE1944 Rev.0 Standard Output)



17.1 - CONNECTION DIAGRAM (SCE1945 Rev.0 Double Output)