MULTIFUNCTION PROTECTION RELAY for GENERATOR OUT-of-STEP PROTECTION

Microelettrica Scientifica

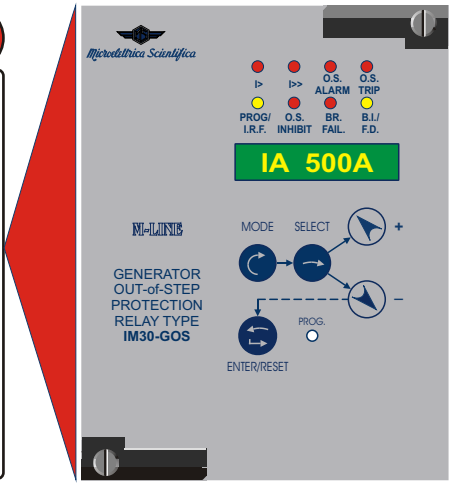
IM30-GOS

N54-R1

LINE M

50/51, 51BF, 68, 78

- Two Overcurrent levels
- Two Current Unbalance levels
- Out-of-Step
- Blocking Output and Blocking Input for pilot wire selectivity coordination
- Breaker Failure protection
- Modbus Communication Protocol
- UL / CSA listed



Three-phase multifunction protection relay for Generator OUT-of-STEP protection with MHO supervision element and double blinder logic.

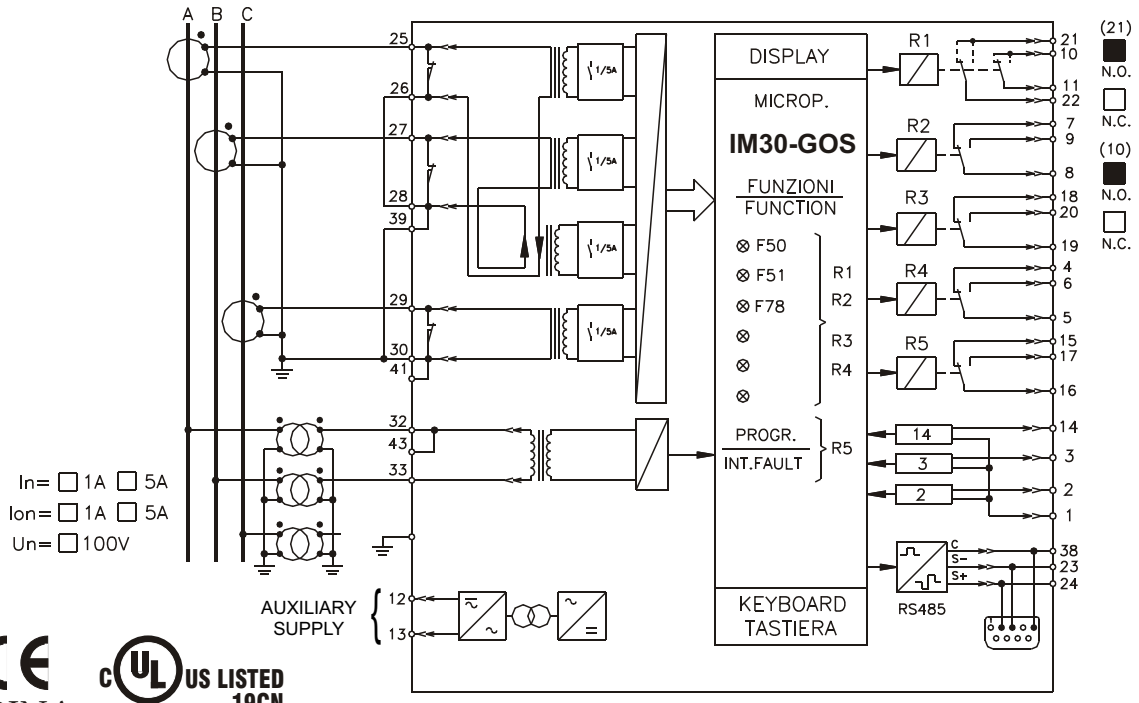
Selectable 1A and 5A current inputs; voltage input adjustable 100-125V.

Real Time Measurements	= IA - IB - IC - Uab - Zr - - I_{AB}
Maximum Demand and Inrush Recording	= IA - IB - IC - Uab - SA - SB - SC

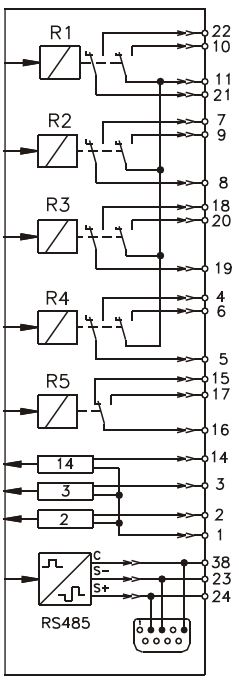
Programmable Input Quantities

Fn = System frequency	: (50 - 60)Hz	
In = Rated primary current of phase Cts	: (1 - 9999)A,	step 1A
Uns = PTs rated secondary voltage	: (100 - 125)V,	step 1V
Ib = Generator rated current	: (0.5 - 1.1)In,	step 0.1In

Connection Diagram



MS-SCE1774-R0
Standard Output



MS-SCE1775-R0
Double Output

CE RINA c UL us LISTED IND.CONT.EQ. 19CN

1 - F50/51 (I>): First Overcurrent Element

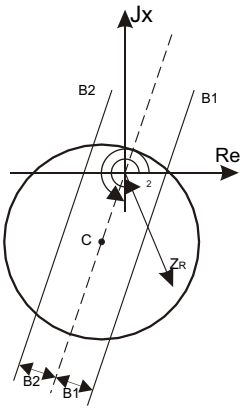
⊙ Current setting range	: **I> = (1 - 2.5)Ib**,	step 0.01Ib
⊙ Instantaneous element	: **0.03s**	
⊙ Independent time delay	: **F(I>) = D: tI> = (0.05 - 30)s**,	step 0.01s
⊙ Dependent time delay (Sandard Inverse)	: **F (I>) = SI** ; tI> = time delay @ 5x[I>]	

2 - F50/51 (I>>): Second Overcurrent Element

⊙ Current setting range	: **I>> = (1 - 12)Ib**,	step 0.1Ib
⊙ Instantaneous element	: **0.03s**	
⊙ Independent time delay	: **tI>> = (0.05 - 3)s**,	step 0.01s

F78 : Generator Out-of-Step

⊙ Impedance characteristic angle	: **z = (0 - 359)°,**	step 1°
⊙ Diameter of the MHO supervision circle	: **K1 = (50 - 300)%Zb,**	step 1%Zb
⊙ Offset of the MHO supervision circle	: **Kc = (0 - 200)%Zb,**	step 1%Zb
⊙ Position of blinder B1	: **(0 - 0.5)K1**,	step 0.01K1
⊙ Position of blinder B2	: **-(0 - 0.5)K1**,	step 0.01K1
⊙ N°of swings to enabe tripping	: **(1 - 5)**,	step 1
⊙ tR Reset time of MHO supervision element	: **(0.1 - 30)s**,	step 0.1s



F51BF : Breaker Failure Element

⊙ Trip time delay	: **tBF = (0.05 - 0.5)s**,	step 0.01s