Overcurrent and short circuit protection
for TALGO application

TYPE

MC30-RG

INSTALLATION GUIDE

1. System structure

The system is composed by three units:

1 Relay MC30-RG   Microprocessor based overcurrent and earth fault protection with automatic reclosure designed for rogowsky coils input.

1 PSU Module   Power supply unit 110 / +/-24V for ABB current sensor .

1 current sensor   Model ABB 165T 20000/20mA output.

Conection between the units PSU and MC30-RG are internally made to semplify the installation.

2. Field connections

2.1 – Analog input connection

Three analog input with programmable sensivity are available on BOARD 0 terminals (Main Relay).

Only one of these (Phase A) is used in this application (internally connected to PSU board terminals), the other inputs are not used and for this reason are shorted on the back plane terminals.

The current sensor must be connected as follow:

Sensor terminals	color	PSU terminals	function
1	Red	72	+24V
2	Black	73	0V
3	Blue	74	-24V
4	Green	75	Out 20mA/20000A
5	White	(not used)	Out 20mA/40000A
6	Brown	76	Out reference
Shield	-	77	Shield

2.2 – Power supply connection

The auxiliary power is supplied by two indipendent module fully isolated an self protected, one built-in onm MC30-RG unit, an other power supply is introduced to supplya the current sensor (PSU).

Range of working of MC30-RG complex is:

90V(-20%) / 150V(+20%) d.c.

Before energizing the unit check that supply voltage is within the allowed limits.

Power supply must be connected as follow:

Power	Board 0 terminals
+110V	39
-100V	49

2.2 – Output connections

Four output relay with programmable function are available on BOARD 0 terminals (Main Relay).

The programmation of output relay are preset as follow:

Relay	Board0 Terminals	coil status	function
R1	17-28	Normally deenergized	Trip of protection functions
R2	16-27	Normally deenergized	Breaker failure function
R3	15-26	Normally deenergized	Start time
R4	14 -25 - 24	Normally energized	Internal fault signalization

Output relay R1 is programmed on F50-51 elements.

3. Protection functions

3.1 – F51 – Overcurrent element

Overcurrent protection element is preset at the follow values:

Trip level [I>]:   1,16 In (700A)
Trip time [tI>]:   0,6 sec
Trip time characteristic [I>]:   IEC – B
Output relay programmed: R1

To modify this values enter in menu "Function – I>";

3.2 – F50 – Short circuit element

Overcurrent protection element is preset at the follow values:

Trip level [I>>]:   3,83 In (2300A)
Trip time [tI>>]:   0,05 sec
Automatic doubling on inrush: Enable
Output relay programmed: R1

Note: the other protection elements available on MC30-RG are disabled;

4. Reference documents

- Operational manual MC30-RG   : MO-0465-ING-R0
- Connection diagram MC30-RG   : SCE-2348-R0
- Connection diagram Talgo   : MS-SCE2360-R0

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