



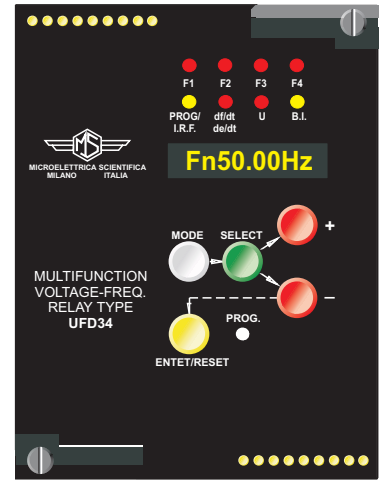
UFD34

nc.N33-R1

THREE-PHASE DIGITAL 4-STAGE FREQUENCY RELAY WITH df/dt AND dv/dt CONTROL



- 27, 59, 81, df/dt, dv/dt**
- Three-phase Voltage, frequency relay for load shedding
 - Four Over / Under Frequency elements
 - Two Over / Under Voltage elements
 - Two df/dt elements
 - One dv/dt element
 - Up to 16 user programmable output relays
 - Event recording
 - Modbus Communication Protocol
 - UL / CSA listed



Input voltage is supplied to three transformer isolated inputs.

The duration of each cycle is measured and stored in to a FIFO; frequency is evaluated on a programmable number of cycles and an updated value is available every cycle.

Real Time Measurements = F - UA - UB - UC - EA - EB - EC

Programmable Input Quantities	
Fn = System frequency	: (50 - 60)Hz
Unp = Rated primary phase-to-phase voltage of system's PTs	: (0.1 - 655)kV, step 10V, 100V, 1kV.
UnS = Rated secondary phase-to-phase voltage of system's PTs	: (50 - 125)V, step 1V.
NCy = N° of cycles evaluated for frequency detection	: NCy = (3 - 10)Cy, step 1Cy

1, 2, 3, 4 - F81 : Four Independently Programmable Frequency Element	
- Operation mode	: Over - Under - Over/Under - Disabled
- Trip level	: $x_F = F_n \pm (0.05 - 9.99)\text{Hz}$, step 0.01Hz
- Trip time delay without df/dt control	: $x_t = (0.05 - 99.99)\text{s}$, step 0.01s
- Activation of df/dt control from 1st or 2nd f' elements	: $x_{f'} = (\text{OFF} - 1f' - 2f')$
- Trip time delay with df/dt in operation	: $x_{t'} = (0.05 - 99.99)\text{s}$, step 0.01s
- Undervoltage operation Lock-out	: $E < = (30-90)\%E_n$, step 1% E_n

1,2 - f' : Two independently Programmable df/dt Elements

- Operation mode : **xdf/dt** = Positive only - Negative only - Positive & Negative
- Trip level : **xf'** = (0.1 - 9.9)Hz/s, step 0.1Hz/s

1,2 - F27/59 : Two Independently Programmable 3-Phase Voltage Elements

- Operation mode : Over - Under - Over/Under - Disabled
- Trip level : **xU** = $U_n \pm (5 - 90)\%U_n$, step 1% U_n
- Trip time delay : **xtU** = (0.1 - 60)s, step 0.1s

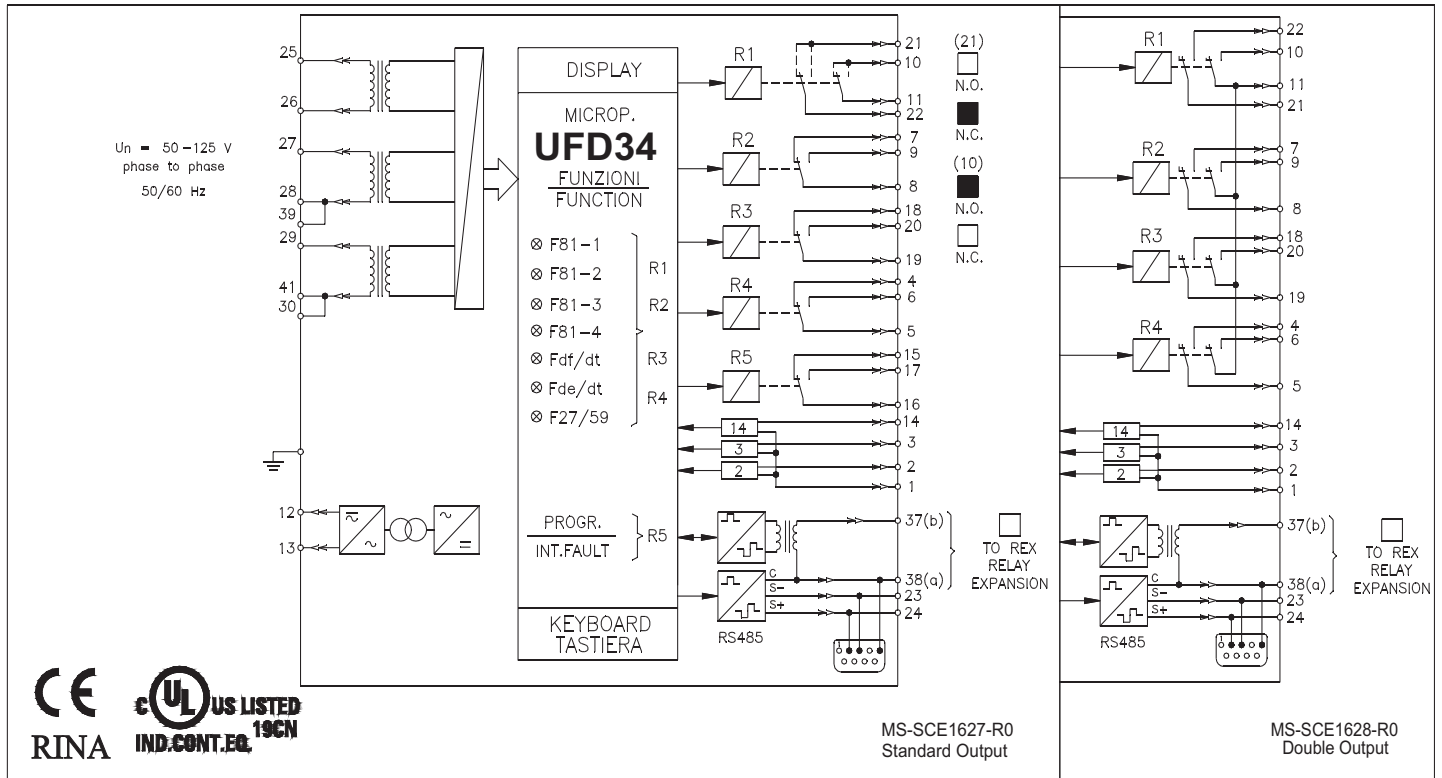
e' : Programmable dv/dt Element

- Operation mode : **de/dt** = Positive only - Negative only - Positive & Negative
- Trip level (max of the 3-Phases) : **e'** = (10 - 99)V/s, step 0.1V/s

Output Relays

- User programmable relays : 4 internal plus up to 12 external with optional expansion module REX-8
- Output relays reset individually programmable : Automatic - Manual
- Time delayed : (0.01 - 99.99)s, step 0.01s

Connexion Diagram



Ordering data

Power supply

- Type 1 : 24 à 100 Vac et 24 à 125 Vdc ± 20 %.
- Type 2 : 80 à 220 Vac et 90 à 250 Vdc ± 20 %.

Execution

- Flush mounting
- Surface mounting
- Standard rack 19"3U

Rated input

- Un = 100 V à 125 V

Special request _____

Quantity _____

