MC1V

MULTIFUNCTION SINGLE PHASE OVERVOLTAGE / UNDERVOLTAGE RELAY

Single-phase voltage relay, suitable for protection of HV, MV, LV power transmission and distribution systems.

The relay MC1V measures the true R.M.S. value of the phase to phase voltage.

Protective Functions
- F59 : 2 Overvoltage elements
- F27 : 2 Undervoltage elements
- F81> : 1 Overfrequency element
- F81< : 1 Underfrequency element

Measurements
- Real Time Measurements (V - Hz)
- Trip Recording (last 20 trips with date & time)

Control
- 4 Output Relays (programmable)
- 3 Digital Inputs
- Time tagged multiple event recording
- Oscillographic wave form capture
- Blocking Outputs and Blockings Input for pilot wire selectivity coordination

Technical Characteristics
- Complete autodiagnostic program
- Display LCD 16 (2x8) characters
- 4 Leds for signalization

Communications
- 1 RS485 Serial communication port on rear side
- 1 RS232 Serial communication port on front panel
- Modbus RTU / IEC870-5-103 Communication Protocols

Expansion Modules (optional)

The relay support only one expansion module
- "UX10-4" 10 Digital Input and 4 Outputs Relay
- "14DI" 14 Digital Inputs
- "14DO" 14 Output Relays

Mounting
- 1 Module box (2 modules with expansion), totally draw-out execution
- IP44 protection case (on request IP54)

Power Supply Ratings
- Type 1 : 24V(-20%) / 110V(+15%) a.c. - 24V(-20%) / 125V(+20%) d.c.
- Type 2 : 80V(-20%) / 220V(+15%) a.c. - 90V(-20%) / 250V(+20%) d.c.

Software
- MSCom2 Program interface for device management

MC06-ING-Rev.04

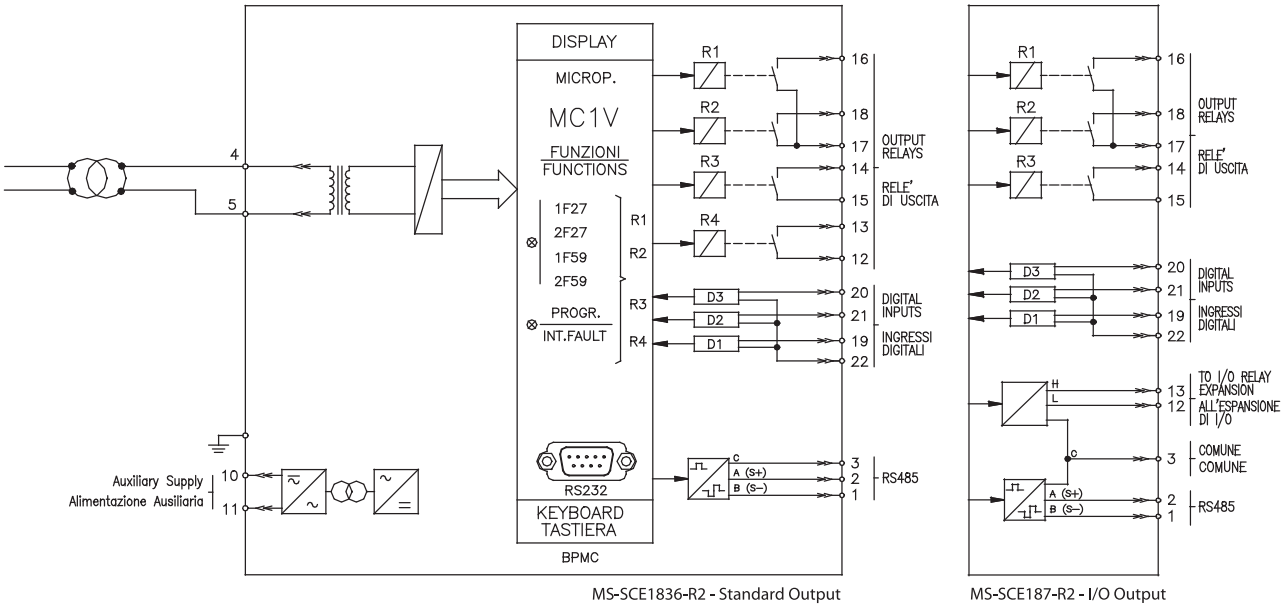
Programmable Input Quantities		
Fn = System frequency	: (50 ÷ 60)Hz	
V1 = Rated primary phase to phase voltage of system's Pts	: (0.05 ÷ 500)kV	step 0.01kV
V2 = Rated secondary phase to phase voltage of system's Pts	: (50 ÷ 115)V	step 0.01V

1F - 27 (V<): First Undervoltage Element		
Function enabling	: Enable/Disable	
Voltage setting range	: V< = (0.20 ÷ 1.20)Vn	step 0.01Vn
Independent trip time delay	: tV< = (0.05 ÷ 60)s	step 0.01s
Instantaneous output	: ≤ 0.03s	
2F - 27 (V<<): Second Undervoltage Element		
Function enabling	: Enable/Disable	
Voltage setting range	: V<< = (0.20 ÷ 1.20)Vn	step 0.01Vn
Independent trip time delay	: tV<< = (0.05 ÷ 60)s	step 0.01s
Instantaneous output	: ≤ 0.03s	
1F - 59 (V>): First Overvoltage Element		
Function enabling	: Enable/Disable	
Voltage setting range	: V> = (0.50 ÷ 1.50)Vn	step 0.01Vn
Independent trip time delay	: tV> = (0.05 ÷ 60)s	step 0.01s
Instantaneous output	: ≤ 0.03s	
2F - 59 (V>>): Second Overvoltage Element		
Function enabling	: Enable/Disable	
Voltage setting range	: V>> = (0.50 ÷ 1.50)Vn	step 0.01Vn
Independent trip time delay	: tV>> = (0.05 ÷ 60)s	step 0.01s
Instantaneous output	: ≤ 0.03s	
1F - 81> (f>): Maximum Frequency Element		
Function enabling	: Enable/Disable	
Voltage setting range	: f> = (40 ÷ 70)Hz	step 0.01Hz
Independent trip time delay	: tf> = (0.05 ÷ 60)s	step 0.01s
Instantaneous output	: ≤ 0.03s	
1F - 81< (f<): Minimum Frequency Element		
Function enabling	: Enable/Disable	
Voltage setting range	: f< = (40 ÷ 70)Hz	step 0.01Hz
Independent trip time delay	: tf< = (0.05 ÷ 60)s	step 0.01s
Instantaneous output	: ≤ 0.03s	

Electronics

MC1V

Connection Diagram



MS-SCE1836-R2 - Standard Output

MS-SCE187-R2 - I/O Output

Typical Characteristics		
Accuracy at reference value of influencing factors	2% Un	for measurements
	2% + (to=20 ÷ 30ms)	for times
Rated Voltage	Un = (50 ÷ 115)Vac - (230V where specified)	
Voltage Overload	2Un for 1sec	
Burden on voltage input	0.2 VA/phase at Un	
Average power supply consumption	<7 VA	
Output relays	rating 6 A; Vn = 250 V	
	A.C. resistive switching = 1500W (400V max)	
	make = 30 A (peak) 0.5 sec.	
	break = 0.3 A, 110 Vcc,	
	L/R = 40 ms (100.000 op.)	

Order code - Example :		
MC1V	1	1
	Power Supply	Output Options
	1 = Type 1	1 = Standard (with R4)
	2 = Type 2	2 = UX10-4
		3 = 14DI
		4 = 14DO

KNORR-BREMSE

Microelettrica Scientifica

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