

Ancillary functions

- Metering functions:
 - Phase voltages (Va, Vb, Vc), Phase-to-phase voltage (Vab, Vbc, Vca)
 - Symmetrical component voltages (V1, V2, V0)
 - Frequency (f), Max. and min. frequency (fmax, fmin)
 - Frequency rate of change (df/dt)
- Event Recording
 - Up to 200 most recent events time-tagged to 1ms resolution.
- Fault recording
 - Up to 4 most recent faults with phase-by-phase reports prior to and during fault conditions.
- Disturbance recording
 - 8 analog and 32 binary signal records.
 - Max. 5 records each of five seconds duration.
- Communication
 - RS485: Modbus, DNP3 or IEC 60870-5-103
 - Ethernet (100Base-TX or 100Base-FX): Modbus, DNP3 or IEC 61850 for model 412 only

Dimensions and Weight

- 4U (177mm) height,
- 1/3 x 19" (149mm) width (for model 410 and 411),
- 1/2 x 19" (223mm) width (for model 412)
- 151mm depth
- 1.5kg (for model 410 and 411)
- 1.8kg (for model 412)

Ordering code GRE130 - [] A - [] - []

Type :	
Voltage protection	GRE130
Model :	
Four pole	
2xBIs, 4xBOs + Fail	410
6xBIs, 4xBOs + Fail	411
6xBIs, 8xBOs + Fail	412
Rating :	
VT: 110V, f: 50/60Hz, 110/250Vdc/110/240Vac	1
CT: 1/5A, f: 50/60Hz, 48/110Vdc	2
VT: 110V, f: 50/60Hz, 24/48Vdc	A
Standard and language :	
IEC (English)	0
ANSI (English)	1
Communication :	
RS485 x 1 (Modbus/IEC 60870-5-103)	10
RS485 x 1 (Modbus/DNP3)	11
For others, see (*)	

(*) : The following options can be equipped when you select model 412.
 A0 : 100BASE-TX (Modbus/IEC 61850) x 1 port and RS485 (Modbus/IEC 60870-5-103) x 1 port
 A1 : 100BASE-TX (Modbus/IEC 61850/DNP3) x 1 port and RS485 (Modbus/DNP3) x 1 port
 C0 : 100BASE-FX (Modbus/IEC 61850) x 1 port and RS485 (Modbus/IEC 60870-5-103) x 1 port
 C1 : 100BASE-FX (Modbus/IEC 61850/DNP3) x 1 port and RS485 (Modbus/DNP3) x 1 port

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GRE130

Protection and Control for MV Systems

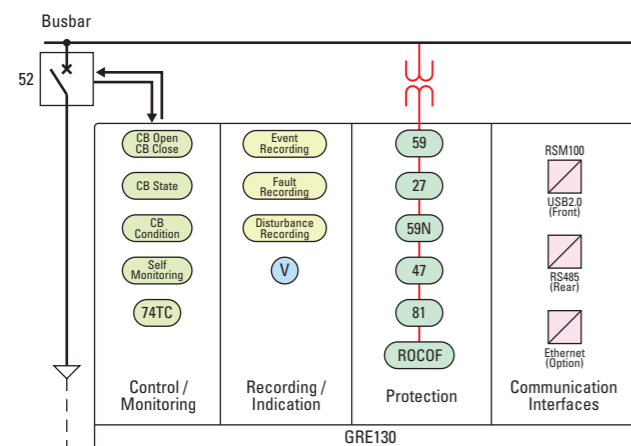


GRE-Series – GRE130

Multi-Function Voltage Protection and Control



GRE130 is a fully numerical multi-function voltage protection device designed for various applications in MV networks, drawing upon proven technologies developed over more than 100 years, and providing a comprehensive range of protection and control functions. This compact and cost-effective device can be applied not only as a feeder protection but also as a load shedding function providing under-frequency and rate of change of frequency relays together with back-up protections for HV feeders, transformers and machines.



Features

- Voltage and frequency protection
- Applicable to 1-phase input (single phase-to-phase voltage and single phase-to-neutral voltage), 2-phase input (two phase-to-phase voltage and two phase-to-phase voltage with zero phase voltage) and 3-phase input (three phase-to-phase voltage, three phase-to-neutral voltage and three phase-to-neutral voltage with zero phase voltage)
- Feeder manager device with CB control function, 43R/L switch and comprehensive support functions
- Compact and cost-effective design
- Elementary, environmentally-friendly, easy to use and featuring enhanced product concepts

Model Number (ANSI)	GRE130 (-410/411)		
	1-ph	2-ph	3-ph
Protection			
Phase O/V (59)	✓	✓	✓
ZPS OV (59N)	✓		✓
Phase U/V (27)	✓	✓	✓
NPS O/V (47)		✓	✓
Frequency (81U/O)	(✓)	✓	✓
Frequency rate of change (df/dt)	(✓)	✓	✓
Control			
Local/Remote Control	✓	✓	✓
Monitoring			
Trip circuit supervision (74TC)	✓	✓	✓
Self supervision	✓	✓	✓
CB State Monitoring	✓	✓	✓

Model Number (ANSI)	GRE130 (-410/411)		
	1-ph	2-ph	3-ph
Monitoring			
Trip Counter Alarm	✓	✓	✓
CB Operate Time Alarm	✓	✓	✓
Communication			
USB port	✓	✓	✓
Remote Communication (Modbus, DNP3, IEC 60870-5-103 and IEC 61850)	✓	✓	✓
Others			
Two setting groups	✓	✓	✓
Menu-based HMI (16 x 8 char)	✓	✓	✓
Configurable LED (8 fixed and 6 configurable)	✓	✓	✓
Programmable Logic Controller (PLC)	✓	✓	✓