

Ancillary functions

- Metering functions:
 - Phase currents (Ia, Ib, Ic), Zero sequence current (Ie, Ise)
 - Sequence currents (I1, I2), Ratio of sequence currents (I2/I1)
 - Phase voltages (Va, Vb, Vc), Phase-to-phase voltage (Vab, Vbc, Vca), Residual voltage (Ve)
 - Symmetrical component voltages (V1, V2, V0)
 - Power (P, Q, S), Power factor (PF)
 - Active energy (Wh), Reactive energy (VARh), Frequency (f)
 - Percentage of thermal capacity (THM%)
 - Maximum phase currents and voltages
 - Maximum power
 - Maximum and minimum frequency
- 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 or IEC 60870-5-103
 - Ethernet (100Base-TX or 100Base-FX): IEC 61850

Dimensions and Weight

- 4U (177mm) height,
- 1/2 x 19" (223mm) width,
- 163mm depth
- 2.5kg (4x0/7x0 model)
- 3.0kg (4x2/7x2 model)

Ordering code **GRE140** - [] - [] - [] - []

Type :	
Directional overcurrent protection	GRE140
Model :	
3DOC+DEF	
6xBIs, 4xBOs + Fail	400
12xBIs, 10xBOs + Fail	401
18xBIs, 16xBOs + Fail	402
3DOC+DEF+SDEF	
6xBIs, 4xBOs + Fail	420
12xBIs, 10xBOs + Fail	421
18xBIs, 16xBOs + Fail	422
3DOC+DEF+Motor Protection	
6xBIs, 4xBOs + Fail	700
12xBIs, 10xBOs + Fail	701
18xBIs, 16xBOs + Fail	702
3DOC+DEF+SDEF+Motor Protection	
6xBIs, 4xBOs + Fail	720
12xBIs, 10xBOs + Fail	721
18xBIs, 16xBOs + Fail	722
Rating :	
VT: 110V, CT: 1/5A, f: 50/60Hz, 110/250Vdc/110/240Vac	1
VT: 110V, CT: 1/5A, f: 50/60Hz, 48/110Vdc	2
VT: 110V, CT: 1/5A, f: 50/60Hz, 24/48Vdc	A
Standard and language :	
IEC (English)	0
Communication :	
RS485 1 port (Modbus/IEC 60870-5-103)	10
100BASE-TX 1port (Modbus/IEC 61850)	A0
RS485 1port (Modbus/IEC 60870-5-103)	
100BASE-FX 1port(*) (Modbus/IEC 61850)	C0
RS485 1port (Modbus/IEC 60870-5-103)	

(*) 100BASE-FX port is not available on 24/48Vdc power rating model.

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 Leading Innovation >>>

GRE140
 Protection and Control
 for MV Systems

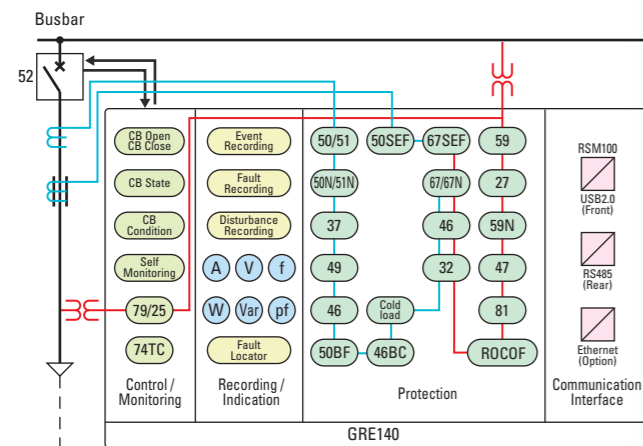


GRE-Series – GRE140

Multi-Function Directional Overcurrent Protection and Control



GRE140 is a fully numerical multi-function directional overcurrent protection device designed for feeder protection 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 back-up protection for HV/EHV equipment and feeders.



Features

- Protection of feeders in medium voltage networks
- Backup protection for generators, transformers and feeders in high voltage networks
- 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

Functions

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|---|---|--|
| <ul style="list-style-type: none"> - Protection <ul style="list-style-type: none"> Directional Phase Fault (67/50P/51P) Directional Earth Fault (67N/50N/51N) Directional Sensitive Earth Fault (67SEF/50SEF/51SEF) Underpower (32) Phase Fault O/C (50/51P) Earth Fault O/C (50/51N) SEF (50/51N) Phase undercurrent (37P) Thermal Overload (49) Directional Negative Phase Sequence Overcurrent (67/46) Current change detector (OCD) Phase O/V (59) ZPS OV (59N) Phase U/V (27) NPS O/V (47) Frequency (81U/O) Frequency rate of change (df/dt) Broken Conductor (46BC) Circuit Breaker Fail (50BF) Start Protection (48) Stalled Motor Protection (50S) Locked Rotor Protection (51LR) Restart Inhibit Cold Load Protection Inrush Current Detector (2f) Reverse Power/Reverse Reactive power (32P/32Q) | <ul style="list-style-type: none"> - Control <ul style="list-style-type: none"> Local/Remote Control Autoreclose and synch check (79/25) - Monitoring <ul style="list-style-type: none"> Trip circuit supervision (74TC) Fault locator (FL) Self supervision CB State Monitoring Trip Counter Alarm ΣI^2 Alarm CB Operate Time Alarm - Communication <ul style="list-style-type: none"> USB port Remote communication (Modbus, IEC 60870-5-103 and IEC 61850) | <ul style="list-style-type: none"> - Others <ul style="list-style-type: none"> Two setting groups Menu-based HMI (16 x 8 characters) Configurable LED (8 fixed and 6 configurable) Programmable Logic Controller (PLC) |
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