

**Ancillary functions**

- Metering functions:
  - Phase currents (Ia, Ib, Ic), Zero sequence current (Ie, Ise)
  - Sequence currents (I1, I2), Ratio of sequence currents (I2/I1)
  - Percentage of thermal capacity (THM%), Max. phase current (Iamax, Ibmax, Icmax)
  - Max. zero sequence current (Iemax, Isemax), Maximum negative sequence currents (I2max)
  - Maximum ratio of sequence current (I2I max)
- Event Recording
  - Up to 200 most recent events time-tagged to 1ms resolution.
- Fault recording
  - Up to 5 most recent faults with phase-by-phase reports prior to and during fault conditions.
- Disturbance recording
  - 8 analog and 12 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 models 402 and 422 only

**Dimensions and Weight**

- 4U (177mm) height,
- 1/3 x 19" (149mm) width (for model 400, 401, 420 and 421),
- 1/2 x 19" (223mm) width (for model 402 and 422)
- 151mm depth
- 1.5kg (for model 400, 401, 420 and 421)
- 1.8kg (for model 402 and 422)

Ordering code GRE110 - [ ] A - [ ] - [ ]

<b>Type :</b>	
Overcurrent relay	GRE110
<b>Model :</b>	
3OC+EF	
2xBIs, 4xBOs + Fail	400
6xBIs, 4xBOs + Fail	401
6xBIs, 8xBOs + Fail	402
3OC+EF+SEF	
2xBIs, 4xBOs + Fail	420
6xBIs, 4xBOs + Fail	421
6xBIs, 8xBOs + Fail	422
<b>Rating :</b>	
CT : 1/5A, f: 50/60Hz, 110/250Vdc/110/240Vac	1
CT: 1/5A, f: 50/60Hz, 48/110Vdc	2
CT : 1/5A, f: 50/60Hz, 24/48Vdc	A
<b>Standard and language :</b>	
IEC (English)	0
ANSI (English)	1
<b>Communication :</b>	
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 models 402 or 422.  
 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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 Leading Innovation >>>

**GRE110**  
 Protection and Control  
 for MV Systems

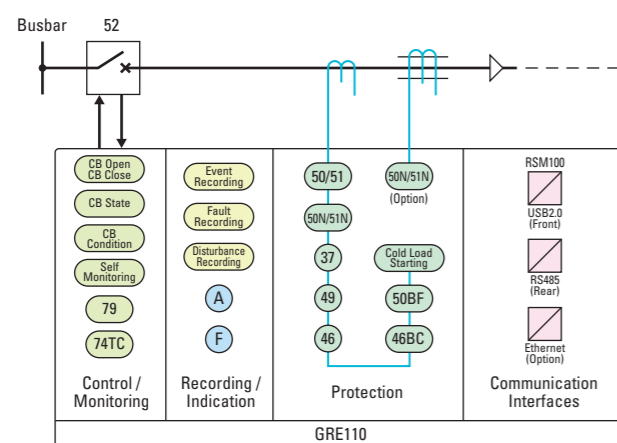


# GRE-Series – GRE110

Multi-Function Protection and Control



**GRE110 is a numerical multi-function 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 feeder protection but also as motor protection and back-up protection for generators and transformers.**



## Features

- Protection of feeders and motors in medium voltage networks
- Provides 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

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>- Protection           <ul style="list-style-type: none"> <li>Phase Fault O/C (50/51P)</li> <li>Earth Fault O/C (50/51N)</li> <li>SEF (50/51N)</li> <li>Phase Undercurrent (37)</li> <li>Thermal Overload (49)</li> <li>NPS Overcurrent (46)</li> <li>Broken Conductor (46BC)</li> <li>Circuit Breaker Fail (50BF)</li> <li>Cold Load Protection</li> </ul> </li> <li>- Control           <ul style="list-style-type: none"> <li>Local/Remote Control</li> <li>Autoreclose (79)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Monitoring           <ul style="list-style-type: none"> <li>Trip circuit supervision (74TC)</li> <li>Self supervision</li> <li>CB State Monitoring</li> <li>Trip Counter Alarm</li> <li><math>\Sigma I^2</math> Alarm</li> <li>CB Operate Time Alarm</li> </ul> </li> <li>- Communication           <ul style="list-style-type: none"> <li>USB port</li> <li>Remote communication (Modbus, DNP3, IEC 60870-5-103 and IEC 61850)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Others           <ul style="list-style-type: none"> <li>Two setting groups</li> <li>Menu-based HMI (16 x 8 characters)</li> <li>Configurable LED (8 fixed and 6 configurable)</li> <li>Programmable Logic Controller (PLC)</li> </ul> </li> </ul> |
|---|---|--|