TECHNICAL SPECIFICATIONS

PROTECTION

General Settings:	
Frequency:	50 or 60 Hz
Winding CT ratio:	1-4000 in 1 steps
Protection Settings:	
Winding tap:	0.5-20 x I_n
Winding configuration:	Y, D, ZZ
Winding time group:	0 - 11
Winding CT configuration:	Y0, Y6, D1, D5, D7, D11
Differential Function Settings:	
Sensitivity:	0.2 - 0.4 x I_{tap}
K1 percentage restraint:	15 - 100%
K2 percentage restraint:	15 - 100%
K1-K2 inflexion:	0 - 10 x I_{tap}
2nd harmonic restraint:	12 - 100%
5th harmonic restraint:	12 - 100%
87B tap:	4 - 12 x I_{tap}

POWER SUPPLY

Auxiliary Voltage:	48/125 VDC 110/250 VDC

OUTPUTS

TRIPPING CONTACTS

Rated Voltage:	250 VAC
Maximum Opening Voltage:	440 VAC
Rated Current:	16 A
Closing Current:	25 A
Operating Power:	4000 VA
Mechanical Life:	30 x 10^6 ops.

INPUTS

Digital Input Voltage:	As auxiliary voltage
Thermal Capacity:	
Current circuits:	
Continuous:	4 x I_n
During 3 sec:	50 x I_n
During 1 sec:	100 x I_n
DC Burden:	12W
Burden Per Active Input:	8mA per input

TYPE TESTS

The DTP equipment complies with the following standards, which include the GE insulation and electromagnetic compatibility standard and the standards required by Community Directive 89/336 for the EC market, in line with European standards. It also complies with the European directive requirements for low voltage, and the environmental and operating requirements established in ANSI standards C37.90, IEC 255-5, IEC 255-6 and IEC 68.

Insulation Test Voltage:	IEC 255-5, 600V, 2kV 50/60 Hz, 1 min
Impulse Voltage Withstand:	IEC 255-5, 5 kV, 0.5 J
1 MHz Interference:	IEC 255-22-1, Class III
Electrostatic Discharge:	IEC 255-22-2, Class IV
Immunity to Radio Interference:	IEC 255-22-3, Class III
Electromagnetic Fields Radiated with Amplitude Modulation:	ENV 50140, 10 V/m
Electromagnetic Fields Radiated with Amplitude Modulation:	
Common mode:	ENV 50141, 10 V/m
Electromagnetic Fields Radiated with Frequency Modulation:	ENV 50204, 10 V/m
Fast Transients:	IEC 255-22-4, EN 61000-4-4, Class IV
Magnetic Fields at Industrial Frequency:	EN 61000-4-8, 30 Av/m
RF Emission:	EN 55011, Class B

COMMUNICATIONS

Mode:	Half Duplex
Speed:	1200 to 19200 bps
Physical Media:	
RS232 (ports 1,2)	
Plastic fiber optic (port 2 optional)	
Type of connector:	HFBR-4516
Power supplied:	-8 dBm
Receiver's sensitivity:	-39 dBm
Wave length:	660 nm
Glass fiber optic (port 2 optional)	
Type of connector:	STA
Power supplied:	-17.5 dBm
Receiver's sensitivity:	-24.5 dBm
Wave length:	820 nm

*Specifications subject to change without notice.

PACKAGING

Weight:	
Net:	26.4 lbs (12kg)
Shipping:	28.6 lbs (13kg)
Dimensions:	NEED INCH EQUIVALENTS 437 x 200 x 176 mm (19" rack 4 units high)

ENVIRONMENTAL

Ambient Temperature Range:	
Operation:	-20°C to +55°C
Storage:	-40°C to +85°C
Humidity:	Up to 95% noncondensing

CASE

Metal Casing
IP52 grade protection (as per IEC 529)

GUIDEFORM SPECIFICATIONS

The main transformer protection shall be supplied as an integrated digital system. Standard current transformers shall be used to supply the AC inputs. Models shall be available with 2, 3, or four restraint windings.

The following protection functions shall be included:

- Three phase percentage restraint current differential function
- Harmonic restraint which uses the 2nd and 5th harmonic of the differential current to prevent trips during transformer energization or overexcitation
- High-set, unrestrained, instantaneous differential function which acts as backup protection
- Internal or external settings for phase shift compensation and zero-current elimination

As well as the analog inputs for currents, the relay shall have seven digital inputs. A trip mask shall determine which of trip signals will activate the four trip contacts. Eight signalling outputs are provided.

Metering functions shall include:

- Line current for each phase and winding
- Differential current for each phase
- Through current for each phase
- Second and fifth harmonic current for each phase

Monitoring functions shall include:

- Sequence of events recording with the last 166 events stored
- Oscillography with a sampling rate of 16 samples per cycle, 4 records stored
- Self-test diagnostics

The man machine interface shall include a 20 button keypad and a 2 line backlit LCD. Sixteen red LEDs each can be separately programmed to indicate any of the user definable alarms assigned from among the protection and communication states. Two serial gates and 3 connectors shall be included for remote or local access by a personal computer. Fiber optic connections and RS485 shall be available. The relay shall be packaged in a single 7 inch high (4 rack unit) 19 inch rack mount case.

ORDERING

To order select the basic model and the desired features from the Selection Guide below.

DTP	*	*	*	*	*	0	1	0	*	*	*	B	
DTP													Basic unit
	1												Restraint windings: 2 windings
	2												Restraint windings: 3 windings
	3												Restraint windings: 4 windings
		0											P1, P2, P3: M-Link protocol
		2											P1, P3: M-Link protocol; P2: ModBus® RTU protocol
			1										Nominal current rating I_n = 1 A all windings
			5										Nominal current rating I_n = 5 A all windings
			A										Nominal current rating I_n = 5 A for 1st winding, 1 A for all others
			B										Nominal current rating I_n = 1 A for 1st winding, 5 A for all others
			C										Nominal current rating I_n = 1 A for 1st & 2nd windings, 5 A for windings 3 & 4
				0									2 RS232 communication ports
				1									2 RS232 + plastic fiber optic communication ports
				2									2 RS232 + glass fiber optic communication ports
				3									RS232 + RS485 communication ports
					M								Spanish language
					D								English language
									G				48/125 VDC supply voltage
									H				110/250 VDC supply voltage
										*	*		Code for special model definition

See ①

① 0 P1: RS232 P2: RS232 P3: Not available
1 P1: RS232 P2: Plastic Fiber Optic P3: RS232
2 P1: RS232 P2: Glass Fiber Optic P3: RS232
3 P1: RS232 P2: RS485 P3: Not available

NOTE: P1 (front) is switched with P3 (rear)
P2 (rear) is independent

DTP revision level A

For ordering information and features on the earlier DTP (Revision A) please visit us at www.GEindustrial.com/pm