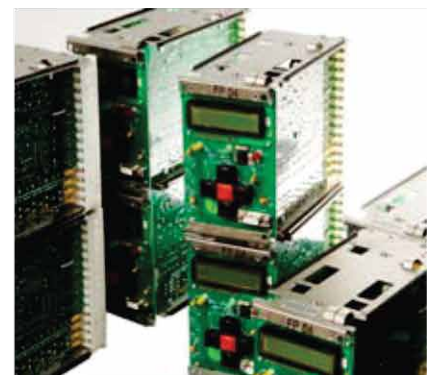
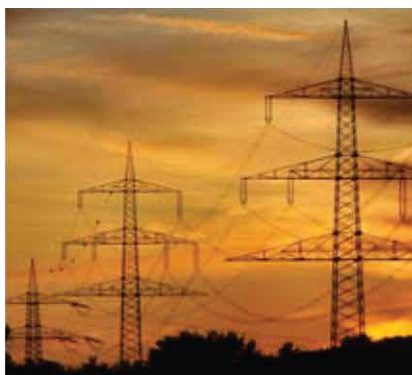
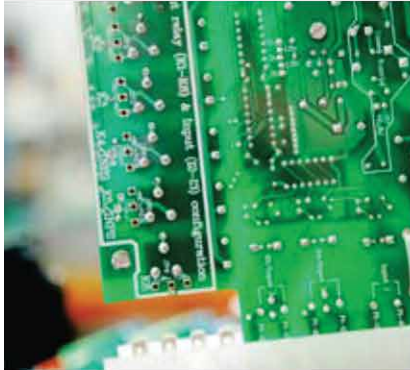


# FP04

## Feeder Protection Relay



Electrical Distributors



The FP04 is a numeric, digital signal processor based, multi-function protection relay. The FP04 provides comprehensive protection for medium and high voltage incoming and outgoing feeder circuits.

### Protection Functions:

- Overcurrent / earth fault / sensitive earth fault / breaker fail

### Protection Curves:

- Standard / very / extremely / long time inverse, or deinite time

### Key Features:

- High speed data communications up to 115k baud
- 4 Dual 1A/5A current measuring elements
- 6 relay outputs
- 30V to 250V AC/DC auxiliary power supply
- Time stamping of trip events, without the need for an internal battery
- LED status indication
- Interactive user interface
- Remote communication via RS232 or RS485 Serial port
- Optically isolated digital input
- Flush mount or 19" rack mounting. Draw out facility with automatic CT shorting contacts

# FP04 Relay Technical Specification

Measuring elements	Quantity Nominal rated current, In Continuous current Short time current Burden 1A Burden 5A	41 A / 5A (User programmable) 3A / 15A 100A for 1s; 300A for 1s <0.05VA <0.05VA
Auxiliary power supply	Nominal rated voltage, Vx Operative range (dc) Operative range (ac) Burden with dc supply Burden with ac supply Mode	30 – 250V ac/dc 30 – 350V dc 40 – 250V ac < 11W with all relays and back-lightON <20VA with all relays and back-lightON 50Hz or 60Hz
Output relays	Quantity Contact form (per relay)	5 Alarm/trip relays (user selectable), plus 1 Self-supervision relay 1-changeover contact (formC), userconfigurable as N/O or N/C
	Load	Resistive load: (cos $\theta$ =1)      Inductive load: (cos $\theta$ =0,4L/R=7ms)
	Rated load (relay K1)	5A at 250 VAC 1A at 220 VDC 3A at 110VDC 5A at 48VDC
	Rated load (relays K2 to K6)	5A at 250 VAC 3.5A at 250 VAC:      5A at 30 VDC 2.5A at 30 VDC
	Rated carry current	5A
	Max. operating voltage	380VA, 125 VDC
	Min. permissible load	100mA at 5 VDC
Digital input channel(s)	Quantity Function Isolation Type Response time	1 - user selectable Selective trip blocking, Event input; or Remote reset Optically isolated 24 – 250V ac/dc voltage input 10ms
Pushbuttons	Quantity Function Type	5 UP, DOWN, LEFT, RIGHT (Black) and ACCEPT (red) Miniature spring loaded manual pushbuttons
Display	Quantity Type Screen size Character height	1 Back-lit Liquid Crystal Display (LCD), with full alpha-numeric character set 16 character x 2 line 5mm
Indicators	Quantity Type Function	3 Light Emitting Diodes (LEDs) Green: POWER ON / HEALTHY Yellow : ALARM/START Red : TRIP
Serial data port	Quantity Isolation Baudrate	2 – 1x RS232 (Front panel ); 1 x RS232/485 selectable (Rear) Optically isolated Selectable from 1200baud up to 115k baud maximum
Serial data Protocols	2 Protocols are catered for, which are co-resident	Modbus RTU protocol and Proprietary STRIKE protocol
Protection functions (Over current, earth fault and Sensitive earth fault)	Selectable curves	Standard Inverse (SI) Very Inverse (VI) Extremely Inverse (EI) Long time Inverse (LTI) Definite Time (DTL)
Mass Overall dimensions	Packaged	2,5kg 101(W) x 176(H) x 253(D)
Accuracy	SI, VI and LTI curves	$\pm 5.0\% + 40\text{ms}$ for I/I> between 2.0 and 20.0 times
	EI curve	$\pm 7.5\% + 40\text{ms}$ for I/I> between 2.0 and 20.0 times
	DTL curve	$\pm 0.5\% + 40\text{ms}$ for I/I> greater than 1.1
Repeatability	SI, VI, EI and LTI curves	$\pm 2.0\% + 10\text{ms}$ for I/I> between 2.0 and 20.0 times
	DTL curve	$\pm 0.5\% + 10\text{ms}$ for I/I> greater than 1.1
(SI:Standard Inverse VI:Very Intense EI:Extremely Inverse LTI:Long Time Inverse DTL:Definite Time Delay)		