

# MiCOM P821

## Breaker Failure Protection



### ENHANCED PROTECTION WITH ADVANCED NUMERICAL TECHNOLOGY

The MiCOM P821 is an Advanced Breaker Failure relay based on the latest numerical technology. It offers a range of protection functions, combined with extensive monitoring capacities to give you optimised efficiency and maximum control for your electrical schemes.

### GREATER SECURITY

MiCOM P821's enhanced breaker failure protection function provides you with back up protection when the primary circuit fails to isolate the fault. This numerical relay is more than just a phase segregated detection device for 1/3 pole tripping relay for HV / MV levels, it is also suitable for all voltage ranges.

### ANY APPLICATION - ANY TIME - ANYWHERE

The P821 can use either single stage breaker failure protection (tBF1), for back up protection to the local circuit breaker; or it can use a 2 stage breaker failure protection (tBF1 & tBF2). In 2 stage configuration, the first stage will be used to re-trip the same circuit breaker, while the other stage will be used to provide general tripping to the upstream circuit breaker.



#### CUSTOMER BENEFITS

- Reliable phase segregated detection for 1/3 pole breaker tripping, suitable for all voltage levels
- Sensitive residual current detection
- Fast RESET time
- 1 or 2 stage CB failure
- Simple and easy to programme, standard MiCOM Px20 setting procedure

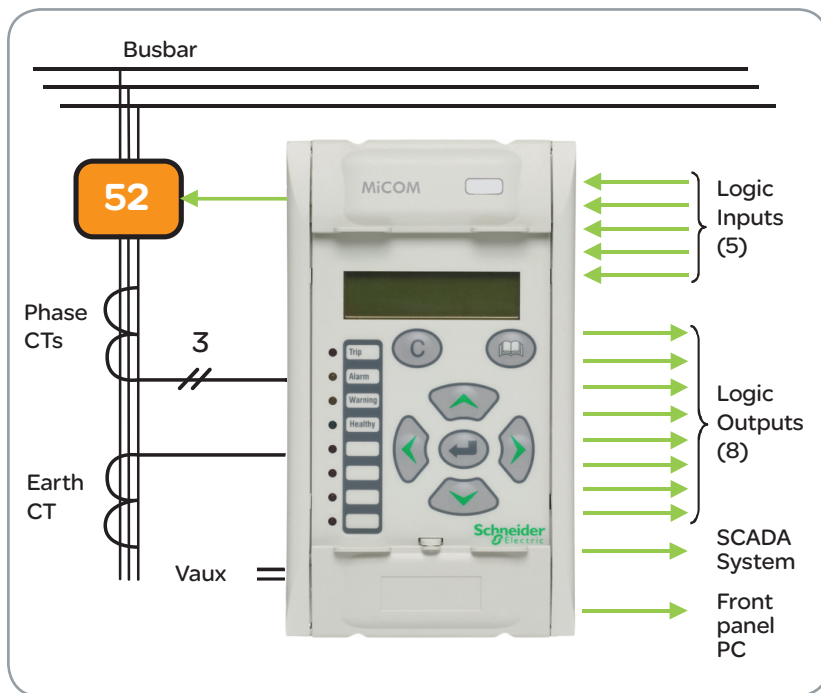
Functions	Common Names	MiCOM P821
CB FAIL	50BF (Ph), I <	•
	50BF (N), IN <	•
CB FAIL Negative	50BF, I 2 <	•
Stage 1 Timer	tBF1	•
Stage 2 Timer	tBF2	•
Dead Zone (End Zone)	DBI	•
Pole discrepancy	Poles Not Together	•
Circuit Breaker monitoring, control and statistics		•
Auxiliary timers	tAUX	2
Latching output contacts	86, Lockout	•
Setting groups		2
Measurement (True RMS)	Metering	4
Event records	SOE	250
Disturbance records		15 sec total
Fault records	Oscillography	25
RS 232 front communication	Comms	•
RS 485 rear communication	Comms	•

**Protection Functions**

- Two stage CB Failure function (50BF)
- Residual current detection (50BF (N))
- Negative sequence current detection (50BF (I2))
- Dead Zone Protection function (DBI)
- Pole discrepancy function
- Output relay latching features (86, Lockout)

**Breaker Fail Characteristics**

- One independent timer per criterion (phase, earth, negative current) for stage one, single phase tripping orders
- One timer for second stage (tBF2), three phase tripping orders
- Measurement is insensitive to DC transient (avoiding undesired operation)
- Fast RESET time (15ms @ 50Hz, 12ms @ 60Hz)
- Configurable RESET Logic via digital Inputs
- Criteria of current, CB status or combination
- Logic for CB unhealthy condition



**User Interface**

- Display: 2 x 16 Alphanumeric characters, back-lit
- LEDs: 8 including 4 programmable
- Keyboard: 7 button tactile keypad

**Communication**

- Front port: RS232
- Rear port: RS 485 2 wires, half duplex, isolated
- Data rate: from 300 to 38400 bauds
- Protocols: Modbus RTU, Courier, IEC 60870-5-103, DNP3

**Control & Supervision**

- Monitoring the number of CB operation
- Recording the sum of broken current quantity
- Supervision of the local breaker Closing & Opening times
- Statistic Menu

**Boolean Logic Equations**

- 8 Logic equations each with 16 variables

**Measurement**

- Display of all measured quantities
- All records time tagged to a 1ms resolution

**Recording**

- Tripping statistic menu
- Up to 250 events
- Last 25 faults
- Disturbance records : 32 samples/cycle, 15s maximum duration.

**Schneider Electric Industries SAS**

35, rue Joseph Monier  
 CS 30323  
 F - 92506 Rueil Malmaison Cedex (France)  
 Tel.: +33 (0) 1 41 29 70 00  
 RCS Nanterre 954 503 439  
 Capital social 896 313 776 €  
 www.schneider-electric.com

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