

How to Determine Circuit Breaker Ampere Rating

Circuit Breakers Equipped with Micrologic™ Trip System

Class 0600

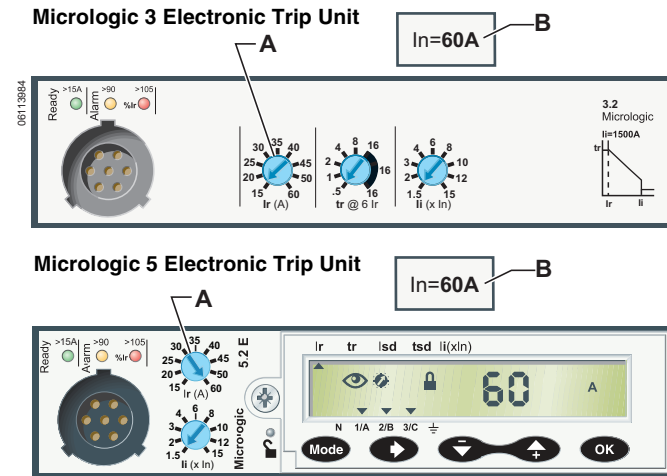
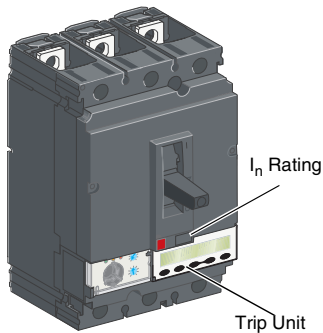
Micrologic™ Trip Units

Types 3.2 (S), 3.3(S), 5.2, 5.3, 6.2, and 6.3—Used With PowerPact™ H-, J- and L-Frame Circuit Breakers

Ampere rating (I_r) is set by the I_r dial (Figure 1, A) on the face of the trip unit. The maximum I_r setting corresponds to the sensor rating I_n (B).

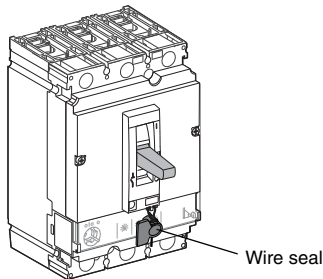
Ampere rating I_r can be adjusted in 1 ampere increments on 5.2, 5.3, 6.2 and 6.3 trip units using the keypad (C).

Figure 1: Micrologic 3.2(S), 3.3(S), 5.2, 5.3, 6.2 and 6.3 Trip Units



- A. Ampere rating I_r dial
- B. Sensor rating I_n

Per the National Electrical Code 240.6(C) a circuit breaker that has restricted access to the adjusting means shall be permitted to have an ampere rating that is equal to the adjusted long-time pickup setting. Restricted access is defined as: (1) removable and sealable covers over the adjustment means, (2) bolted equipment enclosure doors, (3) locked doors accessible only to qualified personnel. Sealable covers are provided using an optional wire seal (catalog no. MICROTUSEAL).



Ground-Fault Setting

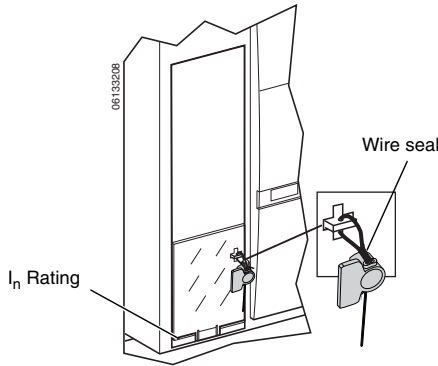
The Micrologic 6 trip unit incorporates ground-fault protection; both pickup and time delay can be adjusted.

Set the ground-fault protection pickup I_g using the keypad. Set I_g to the exact value required (in steps of $0.05 I_n$ from $0.2 \times I_n$ to $1.0 \times I_n$ for 100–600 A and $0.3 \times I_n$ to $1.0 \times I_n$ for 60 A).

Set the time delay t_g using the keypad. Use the same setting for selecting option I^2t ON. Set t_g to the desired value (0.0 s, 0.1 s, 0.2 s, 0.3 s, or 0.4 s - with or without I^2t ON).

Micrologic™ Trip Units Types 3.0, 3.0A, 5.0, 5.0A, 5.0P, 5.0H, 6.0A, 6.0P, 6.0H—Used With Masterpact™ NT and NW and PowerPact™ M-, P-, and R-Frame Circuit Breakers

Adjustable Rating Plug



Typically the A rating plug is supplied as standard equipment with factory-installed trip units. See Table 1 for other available rating plugs and settings.

Table 1: Adjustable Rating Plug Selection

Rating Plug	Long-time Pickup Settings								
	1.0	0.90	0.80	0.70	0.63	0.60	0.50	0.45	0.40
A	1.0	0.90	0.80	0.70	0.63	0.60	0.50	0.45	0.40
B	1.0	0.95	0.88	0.75	0.63	0.56	0.50	0.44	0.40
C	1.0	0.95	0.83	0.75	0.67	0.58	0.53	0.50	0.42
D	1.0	0.95	0.93	0.90	0.80	0.70	0.64	0.48	0.40
E	1.0	0.95	0.93	0.90	0.85	0.80	0.75	0.70	0.60
F	1.0	0.98	0.96	0.94	0.92	0.90	0.88	0.86	0.84
G	0.82	0.80	0.78	0.76	0.74	0.72	0.70	0.68	0.66
H	0.64	0.62	0.60	0.58	0.56	0.54	0.52	0.50	0.48

To determine ampere rating (I_r), multiply sensor rating (I_n) by the long-time pickup setting. For example:

- $I_n = 2000A$
- Long-time pickup setting = 0.70
- Therefore $I_r = 2000A \times 0.70 = 1400A$

Per the National Electrical Code 240.6(C) a circuit breaker that has restricted access to the adjusting means shall be permitted to have an ampere rating that is equal to the adjusted long-time pickup setting. Restricted access is defined as: (1) removable and sealable covers over the adjustment means, (2) bolted equipment enclosure doors, (3) locked doors accessible only to qualified personnel. A flip down cover is provided to protect the rating plug and long-time pickup setting adjustment. To seal the trip unit, a wire seal is required.

Ground-Fault Setting

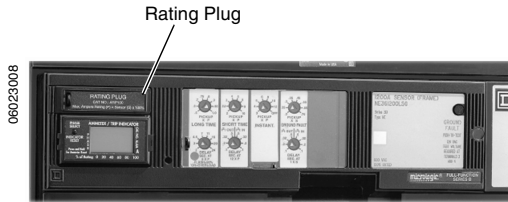
To determine ground-fault setting, multiply sensor plug rating (I_n) by the ground-fault pickup setting. For example:

- $I_n = 2000A$
- Ground-fault pickup setting = 0.30
- Therefore ground-fault setting = $2000A \times 0.30 = 600A$

NOTE: Changing the rating plug or long-time setting will not affect ground-fault pickup level.

For trip units equipped with ground-fault protection for equipment, the test push button used for electronic testing of ground-fault protection is located above the test connector. For other ground-fault current test procedures, consult the trip unit instruction bulletin.

Series B Micrologic Trip Units— Used with LX, LXI, and LE Circuit Breakers



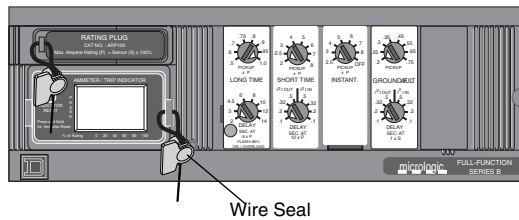
NOTE: Frame size is not sensor size. For example, an LEL circuit breaker can have a sensor rating of 250, 400, or 600 amperes.

Table 2: Interchangeable Rating Plug Kits

Catalog No.	Rating Plug Multiplier Value
ARP040	0.400
ARP050	0.500
ARP056	0.563
ARP058	0.583
ARP060	0.600
ARP063	0.625
ARP067	0.667
ARP070	0.700
ARP075	0.750
ARP080	0.800
ARP083	0.833
ARP088	0.875
ARP090	0.900
ARP100	1.000

Determine sensor rating from label on circuit breaker face.

Ampere rating = sensor size x rating plug multiplier x long-time pickup setting



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Ground-Fault Setting

To determine ground-fault setting multiply sensor size (I_n) by the ground-fault pickup setting.

NOTE: Ground-fault pickup level is not a function of rating plug or long-time setting, only sensor rating.

An optional ground-fault test panel is available. For other ground-fault system field testing, consult the circuit breaker instruction bulletin.

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