

Data Bulletin

MICROLOGIC® Trip Unit Settings Class 600

INTRODUCTION

Adjustable trip functions on circuit breakers or relays should be set based on a coordination study performed by the electrical designer or consultant. Sometimes, such a coordination study is not available at installation. This document is intended to recommend switch positions for Square D electronic trip circuit breakers when no other information is readily available.

TRIP UNIT SETTINGS TO APPROXIMATE THERMAL-MAGNETIC CIRCUIT BREAKER PERFORMANCE

The following tables list trip unit settings for MICROLOGIC circuit breakers to approximate the time-current characteristics of thermal-magnetic molded case circuit breakers. The short-time and instantaneous pickup levels are presented in ranges that closely approximate the "Lo" to "Hi" magnetic adjustment ranges provided by thermal-magnetic circuit breakers.

MICROLOGIC Full-function Series 3, A and B Trip Units MICROLOGIC Standard-function Series B Trip Units

Table 1 lists trip unit settings for electronic trip circuit breakers with MICROLOGIC full-function and standard-function Series B trip units. This is the current version of the MICROLOGIC trip unit, and is identified as Series B on the trip unit. Table 1 also applies to MICROLOGIC full-function Series 3 and Series A trip units. These can be identified by the presence of two rows of rotary switches on the trip unit for setting pickup and delay values.

Table 1: Trip Unit Settings—MICROLOGIC Full-function and Standard-function Series 3 Trip Units and Full-function Series 3 and Series A Trip Units

Thermal-magnetic Circuit Breaker Prefix	Electronic Trip Circuit Breaker		Frame Size	Long-time Trip	Long-time Delay (seconds) ¹	Short-time Pickup (x P) ²	Short-time Delay	Instantaneous Pickup (x P) ¹
	Prefix	Series						
LA, LH	LE, LX LXI	1B	400 A	Thermal-magnetic Ampere Rating	14	8	0.5 IN	5 to 8
LC, LI	LE, LX LXI	1B	600 A		14	8		5 to 8
MA, MH	ME	4, 5, 5A, 5B	400 A		20	10		5 to 10
	MX	5B	800 A		24	10		5 to 10
NH, NA, NC	NE	2, 3, 3A, 3B	600 A		7	10		6 to 12
	NX	3B	1200 A		4.5	10		4 to 8
PA, PH	PE	5, 6, 6A, 6B	1200 A		4.5	8		3 to 8
	PX	6B	1600 A 2000 A		4.5 7	8 6		3 to 6 4 to 6
PC	PE	5, 6, 6A, 6B	1600 A		7	8		4 to 8
	PX	6B	2000 A 2500 A		7 4.5	6 5		3 to 6 3.5 to 5

¹ Delay time is at six times ampere rating

² P = Ampere rating = (sensor size) x (rating plug)



MICROLOGIC Full-function Trip Units Prior to Series 3

Table 2 lists trip unit settings for electronic trip circuit breakers produced by Square D with MICROLOGIC full-function trip units prior to Series 3, Series A or Series B. This table applies to all MICROLOGIC full-function trip units which do not have two rows of rotary switches.

Table 2: Trip Unit Settings—MICROLOGIC Full-function and Standard-function Prior to Series 3

Thermal-magnetic Circuit Breaker Prefix	Electronic Trip Circuit Breaker		Frame Size	Long-time Trip	Long-time Delay (seconds) ¹	Short-time Pickup (x P) ²	Short-time Delay	Instantaneous Pickup (x P) ¹
	Prefix	Series						
LA, LH	LE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LC, LI	LE	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MA, MH	ME	1, 2, 3	400 A 800 A	Thermal-magnetic Ampere Rating	8 8	4 to 9 5 to 10	4 IN	5 to 10 5 to 10
	SE	1, 2	400 A 800 A		4 4	5 to 10 5 to 10		5 to 10 5 to 10
NH, NA, NC	NE	1	600 A 1200 A		3 3	6 to 9 4 to 8		6 to 10 4 to 9
	SE	1, 2	1200 A		2	4 to 8		4 to 8
PA, PH	PE	1, 2, 3, 4	1200 A 1600 A 2000 A		4 4 4	3 to 8 3 to 8 4 to 6		3 to 8 3 to 8 4 to 6
	SE	1, 2	2000 A		4	4 to 8		4 to 8
PC	PE	1, 2, 3, 4	1600 A		4	4 to 8		4 to 8
			2000 A		4	3 to 7		3 to 8
			2500 A		4	3 to 7		3 to 7
	SE	1, 2	1600 A 2000 A 2500 A		2 2 2	4 to 8 3 to 6 3 to 6		4 to 8 3 to 6 3 to 6

¹ Delay time is at six times ampere rating
² P = Ampere rating = (sensor size) x (rating plug)

MICROLOGIC® Standard-function Series 3 Trip Units

Table 3 lists trip unit settings for electronic trip circuit breakers produced by Square D with MICROLOGIC standard-function Series 3 trip units. This table applies to all standard-function trip units which do not have a series B label on the trip unit.

Table 3: Trip Unit Settings—MICROLOGIC Standard-function Series 3 Trip Units

Thermal-magnetic Circuit Breaker Prefix	Electronic Trip Circuit Breaker		Frame Size	Overload Ampere Rating	Overload Delay	Short-time Pickup (x Ampere Rating)	Short-time Delay
	Prefix	Series					
LA, LH	LX LXI	N/A	N/A	N/A	N/A	N/A	N/A
LC, LI	LX LXI	N/A	N/A	N/A	N/A	N/A	N/A
MA, MH	MX	4, 5	400 A 800 A	Thermal-magnetic Ampere Rating	MAX MAX	6 to 10 6 to 10	INST
NH, NA, NC	NX	2, 3	600 A 1200 A		INT INT	4 to 8 6 to 10	
PA, PH	PX	5, 6	1200 A 1600 A 2000 A		INT INT INT	3 to 8 3 to 6 4 to 6	
PC	PX	5, 6	1600 A 2000 A 2500 A		INT INT INT	4 to 8 3 to 6 3 to 5	

Zero-sequence Ground-fault Protection Systems

Zero-sequence sensing ground-fault protection systems are used with thermal-magnetic circuit breakers or fusible switches for equipment ground-fault protection. The ground-fault pickup and delay settings on the electronic trip circuit breaker can be used to achieve trip curves similar to the Square D GROUND-CENSOR® ground-fault relay.

Due to design differences in how the tripping values are found, a comparison of trip curves is necessary to find which ground-fault pickup and delay settings on the electronic trip circuit breaker will approximate the values of the GROUND-CENSOR ground-fault relay.

NOTE: For more information on coordination and trip curves, or for a complete power system analysis and coordination study, contact your local Square D sales office.

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Bulletin No. 0600DB0701 July 2001 Replaces 0600P9501 dated 10/95.

