

Instructions for Type L-65 Trigger Fuse Switch

S 3369-D-34G01 For Normally Open Contact

S 3369-D-34G02 For Normally Closed Contact

(Without trigger fuse)



I.L. 15829-9

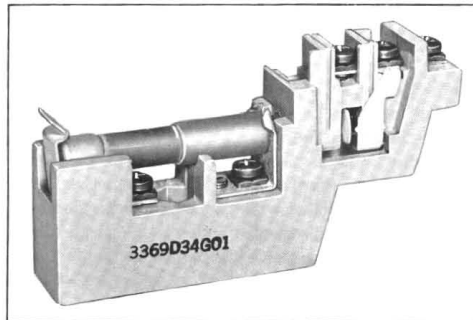


Fig. 1 Type L-65 Trigger Fuse Switch With Normally Open Contacts and Fuse Installed (Photo BD 68-0252)

APPLICATION

The Type L-65 Trigger Fuse Switch was specifically designed for operation with indicating or trigger fuses rated up to 600 volts maximum. The switch assembly is suitable for mounting on either steel or insulating panels or brackets. The fuse clip mountings are for 2" long x .405" diameter fuses.

Trigger fuses are quite commonly wired in parallel with power fuses in semi-conductor equipment to provide positive indication of blown fuses. Upon blowing, a spring loaded striker pin in the trigger fuse is released instantaneously which then projects .218" out the end of the longer fuse ferrule. It exerts a static force of approximately one pound. This travel and force are adequate for operating the contacts of the trigger fuse switch.

Trigger fuses are readily available in voltage ratings of 130 and 600 volts maximum. The minimum fusing current is 3 amps. and the fuse has an interrupting rating of 100,000 amps.

RATING

This trigger fuse is insulated for 600 volts maximum from the fuse terminals to ground and to the switch contacts and terminals.

The single pole switch contacts are insulated between terminals for 300 volts maximum.

Effective 2-1-69

The contacts are capable of carrying a maximum of 5 amperes AC continuously. Other contact carrying and interruption ratings are tabulated in Fig. 2.

Circuit Volts	Amperes Max.			
	A-C		D-C	
	Cont. & Rupt.	In- Rush	Coil Load	Resis. Load
150	5	20	0.5	1.0
300	2.5	10	0.25	0.5

Fig. 2 Contact Ratings

CONSTRUCTION

All parts are mounted on a high-strength molded glass-polyester insulating base. A beryllium copper spring contact member provides an electrical connection to the shorter ferrule of the trigger fuse. It has sufficient deflection to accommodate considerable variations in fuse lengths. This action forces the longer fuse ferrule against its contact to always insure that the fuse striker pin can operate to its maximum extension when the fuse blows. The fuse striker pin operates a sliding insulating push rod to actuate the stainless steel spring loaded double-break contacts.

The molded base is arranged in such a manner that it is impossible to properly seat the fuse unless the longer fuse ferrule is adjacent to the insulating push rod. The molded base at the spring contact end will accommodate the smaller .350" diameter fuse insulating tube, but will not permit the entry of the longer .405" diameter metal ferrule.

In the normal condition, the red insulating push rod is readily visible to show that the fuse has not operated. When the fuse blows, the red rod is pushed into the molded base by the .095" diameter striker pin and is no longer visible. The moving and stationary switch contacts are also visible and can be easily checked to determine the moving contact position relative to the stationary contacts.

The base and stationary contacts are designed so that the single pole contact assembly can be readily assembled for either normally open or normally closed operation.

This single pole circuit is not suitable for a transfer contact operation. The moving and stationary contacts have a relatively heavy silver plating to insure good contact. An extra terminal is provided at position 4 for wiring in or mounting a neon indicating light. After the trigger fuse has operated, the switch contacts will be mechanically held in the tripped position until the blown trigger fuse is removed.

All terminals are provided with wire clamps that are suitable for accommodating up to two conductors. The terminal screws are of the thread forming type that provide positive metal-to-metal contact with the swaged sheet metal contact parts. In addition, these screws self-thread into the molded base to securely hold the stationary contacts to the base.

CONTACT ASSEMBLIES

For normally closed contact operation, the stationary contacts are assembled in numbered positions 1 and 2. For normally open contact operation, the contacts are assembled in positions 2 and 3 as shown on Fig. 3. The contact wiring diagram symbols are also molded on the base between the specific pair of terminals. The moving contact assembly is the same for either normally closed or normally open operation.

The contact gap is approximately .220" (total for both gaps) for either the normally open contact assembly or the tripped normally closed contact unit.

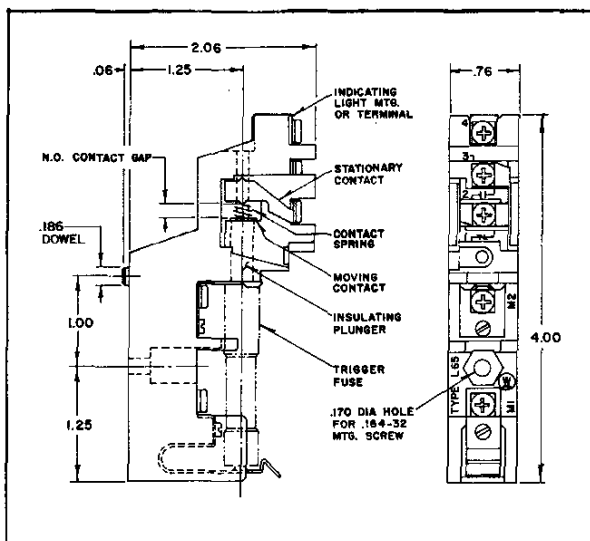


Fig. 3 Assembly and Outline for Type L-65 Trigger Fuse Switch (Dwg. 2038A93 Sh. 1)

The overtravel or clearance from the insulating push rod to the adjacent fuse terminal is approximately .030" to .040" for the normally closed assembly. For the normally open contact assembly, the moving contact moves approximately .110" while the fuse striker pin has a potential for moving approximately .190".

The contact force for the normally closed assembly is approximately .4 lb. (total for both contacts). For the normally open contact unit, the contact force is approximately .5 lb. (total for both contacts).

The stationary contacts have relatively sharp points in contact with the flat moving contact. This provides very high point contact pressure to insure a good electrical circuit even though the switch may not be operated for long periods of time. These contact parts are silver plated and will provide good contact even though they may become blackened due to atmospheric conditions.

OUTLINE

Figure 3 shows the outline and dimensions of the Type L-65 Trigger Fuse Switch. The contacts in this assembly are assembled for normally open operation.

MOUNTING

It is recommended that the Trigger Fuse Switch units be mounted 1" apart where a multiple number of switches

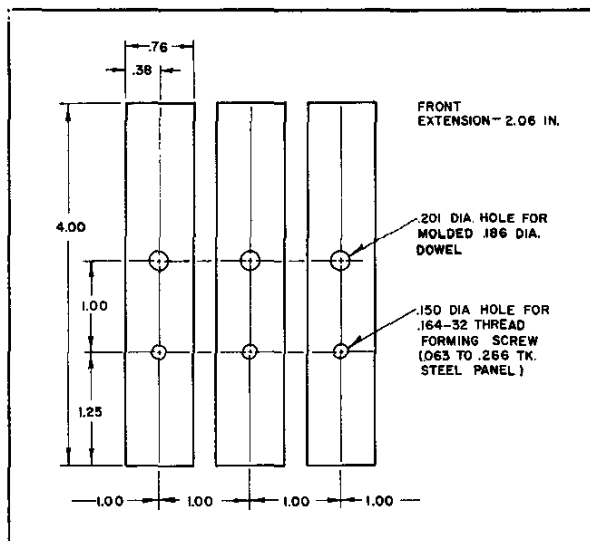


Fig. 4 Recommended Spacing for Multiple Trigger Fuse Switch Assemblies (Dwg. 2038A93 Sh. 2)

are required. This spacing provides room for the wiring between switches and provides the necessary insulation distance in air between the 600 volt trigger fuse parts and the 300 volt switch moving contacts. It also makes it possible to bus the common terminal connections.

The switch can be mounted by means of one screw from the front. A .164-32 x 1/2 *Thread Forming* screw (S# 466-A-625-H05) is recommended for mounting. There are no loose nuts, steel chips or burrs when *thread forming* screws are used.

The molded base has a .186" diameter x .06" high dowel molded on the base 1" from the mounting hole. The suggested drilling plan is shown in Fig. 4.

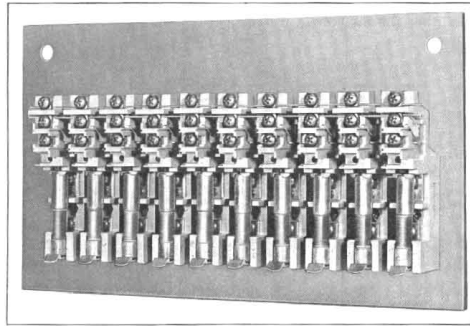


Fig. 5 Connection of Switch Terminals by Straight Bus Conductor (Photo BD 68-0251)

WIRING DIAGRAM SYMBOLS

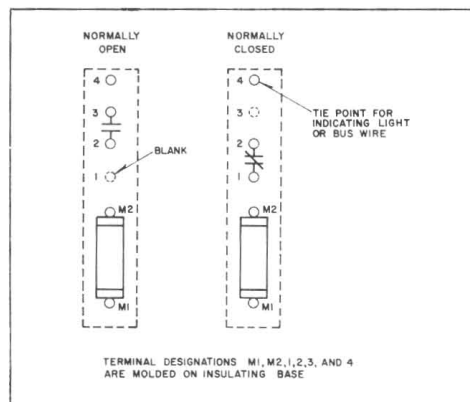


Fig. 6 Trigger Fuse Switch Wiring Symbols (Dwg. 2038A93 Sh. 3)

WIRING

The majority of indicating circuits have at least one common connection to the switch terminals. This trigger fuse switch has been specifically designed for busing the terminals together with a straight bare wire. It is recommended that a bare #18 (.040" diam.) tinned copper wire be used for this purpose. Fig. 5 shows No. 3 and 4 terminals connected in this manner. The other terminals can also be wired in a similar manner.

INDICATING LIGHTS

An indicating light can be readily mounted on the switch by means of a special bracket as shown in Fig. 7. Neon indicating lights are most commonly used for visual indication of blown power fuses.



Fig. 7 Switch With Integrally Mounted Neon Light (Photo BD 68-0249)

Figure 8 shows a combination switch and indicating light mounting bracket. This arrangement makes it possible to mount the switch and wiring on the inside of an enclosure door with the indicating light protruding through the door.

TRIGGER FUSE

In general, the trigger fuse is not supplied as part of the basic switch assembly. Reference is given in Fig. 9 to the most commonly used fuses.

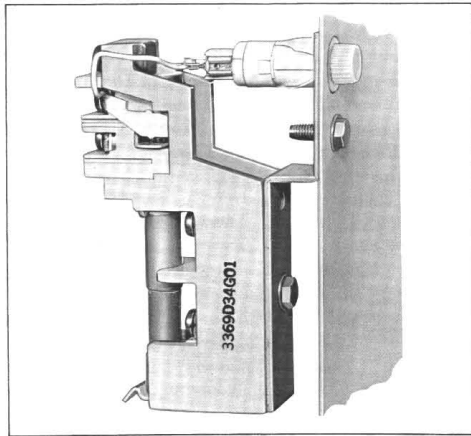


Fig. 8 *Switch With Combination Mounting Bracket and Neon Light (Photo BD 68-0250)*

Style No.	AC and DC Voltage Rating	Cat. No.
417-A-390 H01	0-130	TI-130
417-A-390 H02	0-600	TI-600

Fig. 9 *Trigger Fuse Identification and Ratings*

MAINTENANCE

Very little maintenance is required by the Type L-65 trigger fuse other than occasional examination to see that the insulating push rod and moving contact move freely without friction or binding.

Under dusty conditions, it is recommended that the switch be cleaned periodically by blowing compressed air through the contact area. Under no circumstances should oil or grease be used on the switch as this only enhances the accumulation of dirt.

The terminals should be checked to make sure that they are tightened securely. If parts become damaged in any manner, the switch should be replaced by a complete new unit.

Westinghouse Electric Corporation

General Control Division, Buffalo, New York 14240

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