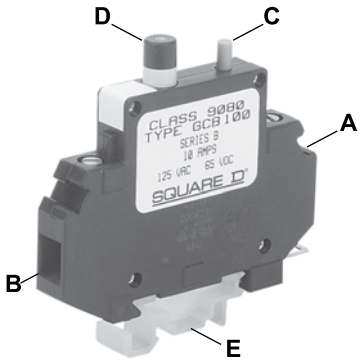
Single-Pole Thermal-Magnetic Control Circuit Protectors

Table 13 - Single-Pole Type GCB Circuit Protector Blocks



A. Thermal-magnetic circuit protector

B. 14 different current ratings: 0.1–15 A

C. On-Off switch

D. Visible trip indication

E. Mounts on Class 9080 GH track and on DIN mounting track

9080GCB circuit protector blocks have solderless box lugs. They accept one CU 10–16 AWG wire.

Table 14 - Technical Data

Dielectric strength	1500 Vac
Insulation resistance	100 MΩ
Weight	Approximately 2.2 oz.
Terminals	Box lug type
Recommended tightening torque	8–10 lbf-in (0.9–1.1 N•m)
Approvals	UL File: E233026 CNN: QVN02 CE CSA File: 025490 Class: 3211–07
Fingersafe per DIN 57470	Yes
Maxiumum voltage rating • GCB01 through GCB70 • GCB100 and GCB150	 • 250 Vac / 65 Vdc • 125 Vac / 65 Vdc
Maximum interrupting rating	200 A, but not exceeding 10,000% (100 times) rated current

Selection:

1. Determine the inrush correction factor from Table A below.
2. Determine the temperature correction factor from Table B below.
3. Determine the sealed current of the load that is being protected.
4. Multiply the sealed current by the two correction factors and choose the closest circuit protector.

   NOTE: Choosing a circuit protector with a value lower than the calculated value might cause nuisance tripping, while choosing the larger might provide a protector that will not properly protect the load.

Example:

A solenoid with sealed current of 0.75 A, an inrush ratio of 1:6, and in an ambient temperature of 85 °F:

- 0.75 x 1.5 x 1.05 = 1.18
- Choose the 1.2 A protector

The 9080GCB circuit protectors come standard with the track adapter for mounting on 9080GH track (replacement adapter is 9080GH64). Removal of this adapter permits mounting on 9080MH2●●, MH3●●, and AM1 track. See page 18 for a complete listing of available tracks.

Table 15 - Maximum Current Values

Maximum Current	Internal Resistance ¾	Maximum Voltage	Single Pole Type
0.1	133	250 Vac / 65 Vdc	GCB01
0.5	6.6		GCB05
0.8	2.55		GCB08
1.0	1.97		GCB10
1.2	1.22		GCB12
1.5	0.86		GCB15
2.0	0 .49		GCB20
2.5	0 .31		GCB25
3.0	0 .20		GCB30
4.0	0.10		GCB40
5.0	0.80		GCB50
7.0	0.30		GCB70
10.0	<0.02	125 Vac	GCB100
15.0	<0.02	65 Vdc	GCB150

These maximum current values assume the use of insulated copper conductors with 75°C temperature rating, and are calculated based on NEC Article 310, Table 310-16. In most cases this value is the maximum ampacity of that wire or combination of wires (as listed in the above table) which has the greatest current carrying capacity. The actual allowable current for a particular application is dependent upon the number, size, insulation class and other characteristics of the wires used.

Table 16 - Table A: Inrush Ratio Correction

Inrush Ratio	1:1 to 1:4	1:5	1:6	1:7	1:8
Factor	1.3	1.4	1.5	1.6	1.7

Table 17 - Table B: Ambient Temperature Correction

Ambient Temperature	70 °F (21.1 °C)	100 °F (37.8 °C)	120 °F (48.9 °C)	140 °F (60 °C)	160 °F (71.1 °C)	180 °F (82.2 °C)	200 °F (93.3 °C)
Factor	1.0	1.1	1.2	1.3	1.4	1.5	1.6

Tripping Time

Tripping time of the circuit protector is determined from Table C below. Divide the circuit protector value by the temperature correction factor from Table B above to determine the actual rated current referenced in Table C.

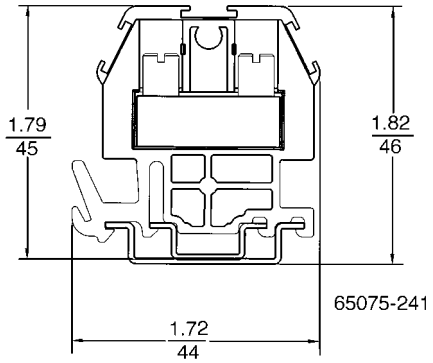
Table 18 - Table C: Tripping Time in Seconds at 70 °F (21.1 °C)

Percent rated current	100%	200%	300%	400%	500%	600%	1000%	2000% and greater
Tripping Time (seconds)	no trip	10–40	38	1.5–9	0.8–6	0.003–4	0.003–2	Max. 0.02

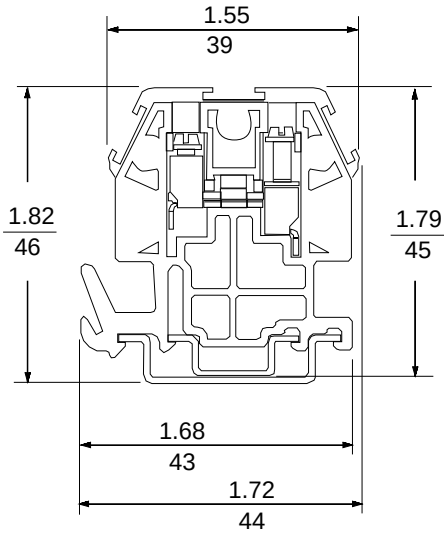
NOTE: When several protectors are channel mounted adjacent to each other, the “no trip” current will be 80% of rated current at 70°F.

Approximate Dimensions

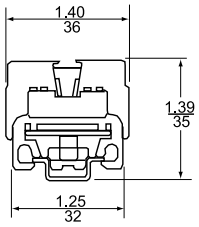
Type G Block



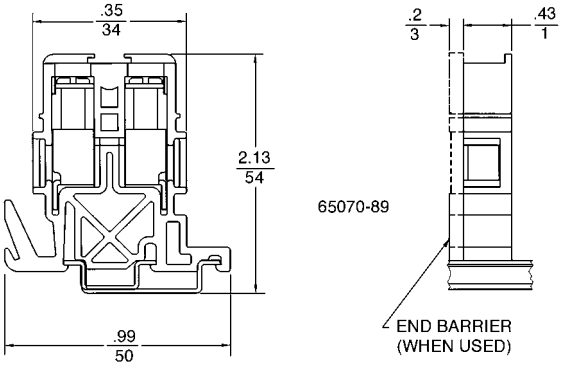
Type GR6 / GR6T



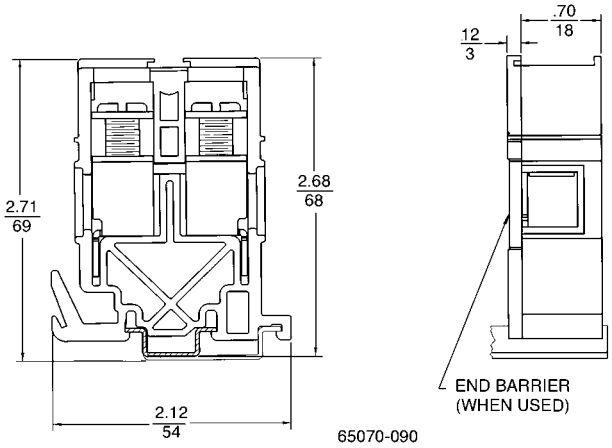
Type GM6



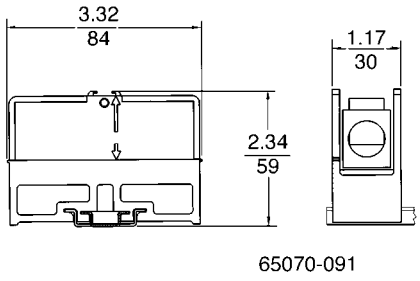
Type GK6



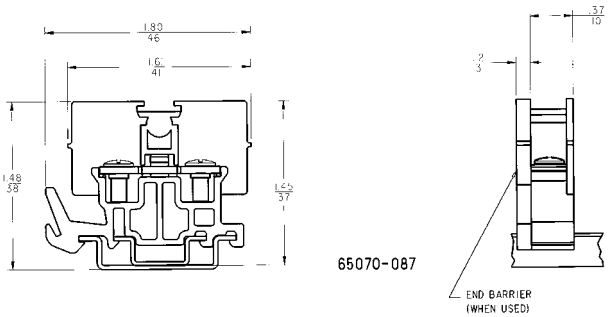
Type GC6



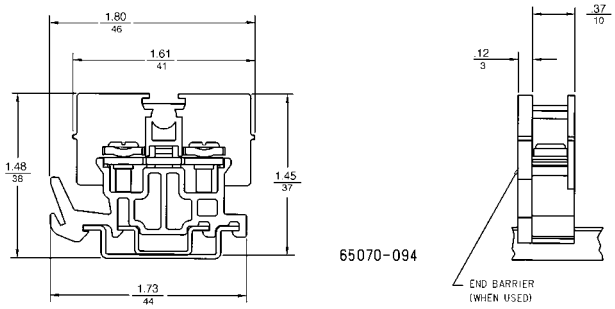
Type GD6



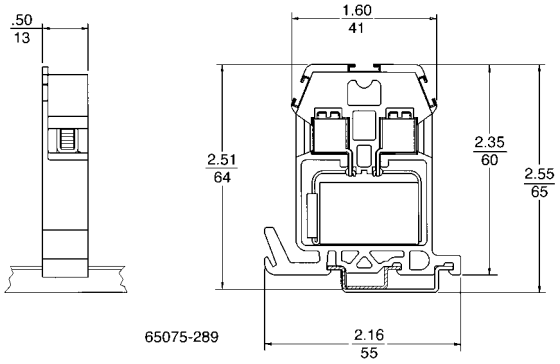
Type GE6



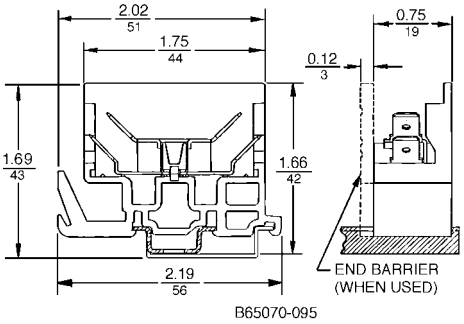
Type GA6



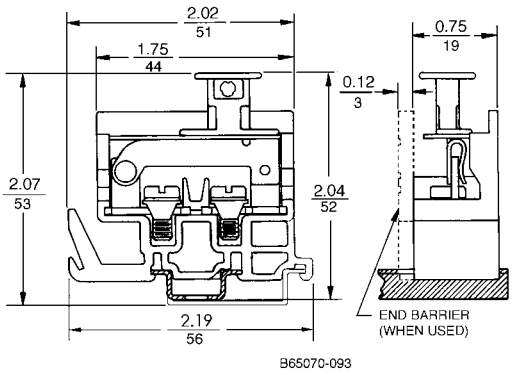
Type GP6



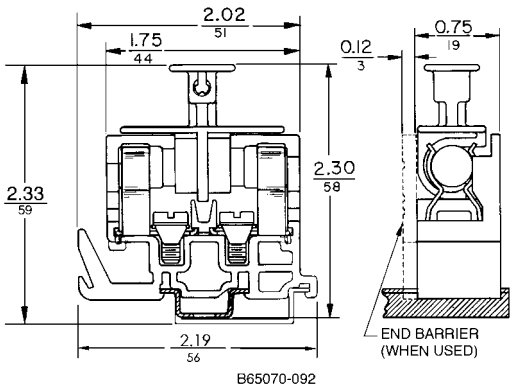
Type GT6



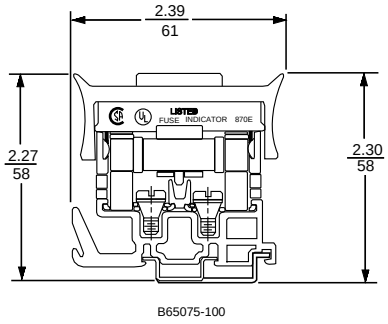
Type GS6



Type GG6

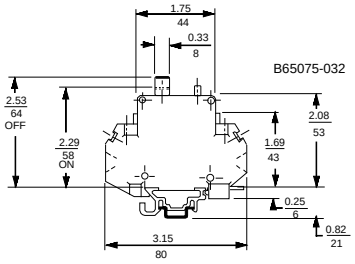


Type GF6 with Fuse Puller

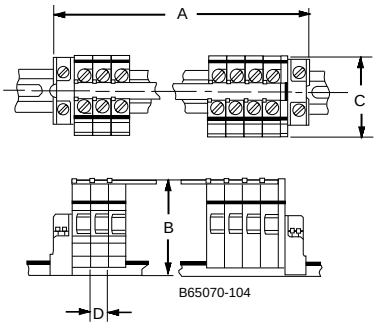


Type GF6 with Blown Fuse Indicator

Circuit Protectors and Assemblies



Type GCB



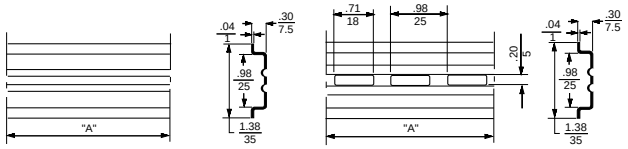
Type G Assemblies

Table 19 - Dimensions

CLASS 9080 TYPE	Dim. A [13] in. (mm)	Dim. B [14] in. (mm)	Dim. C in. (mm)	Dim. D in. (mm)	Blocks per foot
GA6	0.37 N + 0.93 (9.4 N + 23.6)	1.48 (37.6)	1.80 (45.7)	0.37 (9.4)	32
GC6	0.43 N + 0.93 (10.9 N + 23.6)	2.13 (54.1)	1.99 (50.5)	0.43 (10.9)	28
GD6	0.70 N + 0.93 (17.8 N + 23.6)	2.71 (68.8)	2.12 (53.8)	0.70 (17.8)	17
GE6	1.17 N + 0.93 (29.7 N + 23.6)	2.34 (59.4)	3.32 (84.3)	1.17 (29.7)	10
GF6 (with extractor)	0.75 N + 0.93 (19.1 N + 23.6)	2.33 (59.2)	2.19 (55.6)	0.75 (19.1)	16
GF6 (with blown fuse indicator)	0.75 N + 0.80 (19.1 N + 23.6)	2.39 (60.7)	2.30 (58.4)	0.75 (19.1)	16
GG6	0.75 N + 0.93 (19.1 N + 23.6)	2.07 (52.6)	2.19 (55.6)	0.75 (19.1)	16
GK6	0.35 N + 0.93 (8.9 N + 23.6)	1.39 (35.3)	1.40 (35.6)	0.35 (8.9)	34
GM6	0.24 N + 0.93 (6.0 N + 23.6)	1.82 (46.2)	1.72 (43.7)	0.24 (6.0)	51
GP6	0.37 N + 0.93 (9.5 N + 23.6)	1.48 (37.6)	1.80 (45.7)	0.37 (9.5)	32
GR6	0.35 N + 0.93 (8.9 N + 23.6)	1.82 (46.2)	1.72 (43.7)	0.35 (8.9)	34
GS6	0.75 N + 0.93 (19.1 N + 23.6)	1.69 (42.9)	2.19 (55.6)	0.75 (19.1)	16
GT6	0.50 N + 0.93 (12.7 N + 23.6)	2.55 (64.8)	2.16 (54.9)	0.50 (12.7)	24
GCB	0.50 N + 0.93 (12.7 N + 23.6)	3.38 (85.9)	3.15 (80.0)	0.50 (12.7)	24

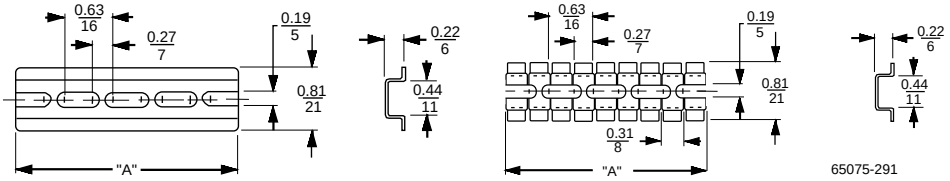
13. Where N is the total number of blocks in the assembly. If slip-in end clamps (9080GH11) are used, subtract 0.8 inches (20.3 mm). Slip-in clamps cannot be used with 9080GK6, GE6 blocks.
14. Dimension shown assumes use of DIN 3 track, except for the 9080 GK6 block.

Mounting Track and End Clamps



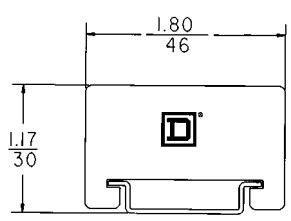
9080MH2•• **9080MH3••**

- If the last two digits of the catalog number is 20, then “A” is equal to 19.7 in.
- If the last two digits of the catalog number is 39, then “A” is equal to 39.4 in.
- If the last two digits of the catalog number is 79, then “A” is equal to 78.7 in.

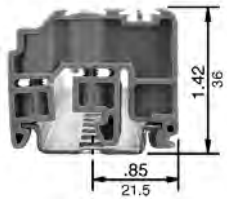


9080GH1•• **9080GH2••**

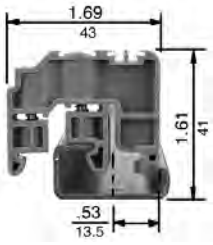
“A” is the last two digits of the catalog number in inches. For example, for 9080GH148, “A” is equal to 48 inches.



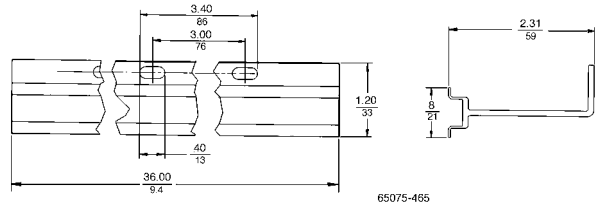
9080MHA10



9080MH10 on 9080MH2•• or 9080MH3•• Track



9080MH10 on 9080MH1•• Track



9080GH336