

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

PowerPact™ Q-Frame Molded Case Circuit Breakers and Switches

Types QB, QD, QG and QJ
Class 734

Catalog

0734CT0201 R02/20
02/2020



SQUARE D™
by Schneider Electric

Legal Information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a non-exclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.

Table of Contents

Description 5
- Applications 5

Catalog Numbering System 6

Terminations 9
- Lug Configuration 9
- Special Terminations 9
- Control Wire Taps 9
- Special Features 10
- Multiple Options 10

Overcurrent Protection 11
- Operating Mechanism 11
- Trip Indication 11
- Standards 12
- Interrupting Ratings 12
- Molded Case Switches 12

Summary of Specifications 13

Accessories 14
- Service Barriers 14
- Handle Padlock Attachment 14
- Mechanical Interlocks 15
- Lug Options 15
- Correction Factor 17
- Circuit Breaker Enclosures and Enclosure Accessories 17
  - Enclosure Dimensions 18

Dimensions 19

Trip Curves 20

Description

The PowerPact™ Q-frame line of circuit breakers includes QB, QD, QG and QJ molded case circuit breakers and QB automatic switches. They are rated 240 Vac, 250 A max. and are available in lug or bus-connected unit-mount constructions, or I-Line™ group-mounted construction.

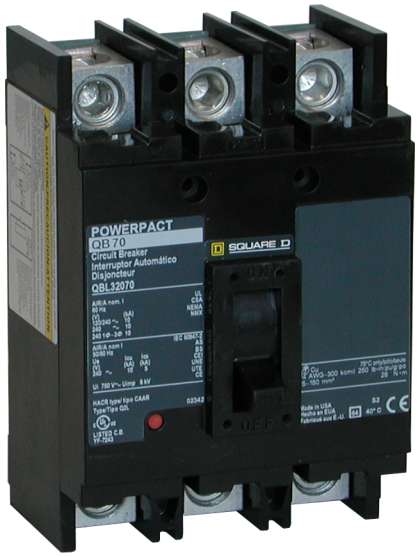
Applications

The PowerPact Q-frame circuit breakers are used for overcurrent protection and switching on ac systems. PowerPact Q-frame circuit breakers are rated for 240 Vac (208Y/120 Vac for 3-pole 100 kA) and are available with UL® Listed interruption ratings from 10 to 100 kA. Unit-mount circuit breakers are available with lugs on both ends for cabled applications or with mounting studs for bus-mounted applications. These circuit breakers may be mounted in individual enclosures, metering devices, panelboards or switchboards. The I-Line circuit breakers are specifically designed for use in I-Line panelboards and switchboards. **NOTE:** the PowerPact Q-frame circuit breaker is a direct replacement for the Q2 Series device.

PowerPact Q-Frame 2P Unit-Mount Molded Case Circuit Breaker



PowerPact Q-Frame 3P Unit-Mount Molded Case Circuit Breaker



PowerPact Q-Frame 2P I-Line Molded Case Circuit Breaker



PowerPact Q-Frame 3P I-Line Molded Case Circuit Breaker



Catalog Numbering System

NOTE: When ordering circuit breakers, catalog number may be collapsed if character is not needed.

Table 1 - Catalog Numbering System for PowerPact Q-Frame Circuit Breakers

Number Segment	Character	Description	Q	B	L	3	2	250	4	LW[1]
Circuit Breaker Family	Q									
Circuit Breaker Type (Interrupting Rating)	B	10 kA								
	D	25 kA								
	G	65 kA								
	J	100 kA								
Connection Type	A	I-Line shroud on ON (I) end								
	E	I-Line bolt-on configuration								
	F	No lugs (bus connection)								
	L	Lugs on both ends								
	M	Lugs on ON (I) end only								
	P	Lugs on OFF (O) end only								
Poles	2									
	3									
240 V Only	2									
Continuous Current Rating (A)	70									
	80									
	90									
	100									
	110									
	125									
	150									
	200									
	225									
	250[2]									
	000 S 22 = Switch (QB only)									
I-Line Phasing	2-pole	1 = AB								
		2 = AC								
		3 = BA								
		4 = BC								
		5 = CA								
		6 = CB								
	3-pole	None = ABC								
		6 = CBA								

1. May be multiple options.
2. 250 A not available in I-Line.

Table 1 - Catalog Numbering System for PowerPact Q-Frame Circuit Breakers (Continued)

Number Segment	Character	Description	Q	B	L	3	2	250	4	LW[3]
Special Ambient	C	A = 50°C[4]								
Termination Options	T	M = Lugs applied to OFF (O) end; studs with nuts and washers on ON (I) end								
		N = Lugs applied to ON (I) end; studs applied to OFF(O) end								
		P = Studs applied to ON (I) end lugs applied to OFF (O) end								
		S = Studs on both ends (no nuts or washers)								
Control Taps	L	U = Control taps applied to ON (I) end								
		V = Control taps applied to OFF (O) end								
		W = Control taps applied to both ends								
Special Features	Y	D = Calibration test report supplied								
		F = Fungus treatment								
		P = Handle padlock attachment, ON (I) or (OFF) position								
		Q = Handle padlock attachment, OFF (O) position only								

3. May be multiple options.
4. This rating is not UL or CSA approved.

Table 2 - PowerPact Q-Frame Circuit Breaker Catalog Numbers

Ampere Rating	Fixed AC Magnetic Trip (A)		B Interrupting 10 kA		D Interrupting 25 kA		G Interrupting 65 kA		J Interrupting 100 kA[5]	
	Hold	Trip	Unit-Mount	I-Line	Unit-Mount	I-Line	Unit-Mount	I-Line	Unit-Mount	I-Line
2–Pole, 240 Vac										
70	1000	1800	*QBL22070*	*QBA22070*	*QDL22070*	*QDA22070*	*QGL22070*	*QGA22070*	*QJL22070*	*QJA22070*
80	1000	1800	*QBL22080*	*QBA22080*	*QDL22080*	*QDA22080*	*QGL22080*	*QGA22080*	*QJL22080*	*QJA22080*
90	1000	1800	*QBL22090*	*QBA22090*	*QDL22090*	*QDA22090*	*QGL22090*	*QGA22090*	*QJL22090*	*QJA22090*
100	1200	2400	*QBL22100*	*QBA22100*	*QDL22100*	*QDA22100*	*QGL22100*	*QGA22100*	*QJL22100*	*QJA22100*
110	1200	2400	*QBL22110*	*QBA22110*	*QDL22110*	*QDA22110*	*QGL22110*	*QGA22110*	*QJL22110*	*QJA22110*
125	1200	2400	*QBL22125*	*QBA22125*	*QDL22125*	*QDA22125*	*QGL22125*	*QGA22125*	*QJL22125*	*QJA22125*
150	1200	2400	*QBL22150*	*QBA22150*	*QDL22150*	*QDA22150*	*QGL22150*	*QGA22150*	*QJL22150*	*QJA22150*
175	1200	2400	*QBL22175*	*QBA22175*	*QDL22175*	*QDA22175*	*QGL22175*	*QGA22175*	*QJL22175*	*QJA22175*
200	1200	2400	*QBL22200*	*QBA22200*	*QDL22200*	*QDA22200*	*QGL22200*	*QGA22200*	*QJL22200*	*QJA22200*
225	1200	2400	*QBL22225*	*QBA22225*	*QDL22225*	*QDA22225*	*QGL22225*	*QGA22225*	*QJL22225*	*QJA22225*
250[6]	1200	2400	*QBL22250*	—	*QDL22250*	—	*QGL22250*	—	*QJL22250*	—
3–Pole[7], 240 Vac										
70	1000	1800	*QBL32070*	*QBA32070*	*QDL32070*	*QDA32070*	*QGL32070*	*QGA32070*	*QJL32070*	*QJA32070*
80	1000	1800	*QBL32080*	*QBA32080*	*QDL32080*	*QDA32080*	*QGL32080*	*QGA32080*	*QJL32080*	*QJA32080*
90	1000	1800	*QBL32090*	*QBA32090*	*QDL32090*	*QDA32090*	*QGL32090*	*QGA32090*	*QJL32090*	*QJA32090*
100	1200	2400	*QBL32100*	*QBA32100*	*QDL32100*	*QDA32100*	*QGL32100*	*QGA32100*	*QJL32100*	*QJA32100*
110	1200	2400	*QBL32110*	*QBA32110*	*QDL32110*	*QDA32110*	*QGL32110*	*QGA32110*	*QJL32110*	*QJA32110*
125	1200	2400	*QBL32125*	*QBA32125*	*QDL32125*	*QDA32125*	*QGL32125*	*QGA32125*	*QJL32125*	*QJA32125*
150	1200	2400	*QBL32150*	*QBA32150*	*QDL32150*	*QDA32150*	*QGL32150*	*QGA32150*	*QJL32150*	*QJA32150*
175	1200	2400	*QBL32175*	*QBA32175*	*QDL32175*	*QDA32175*	*QGL32175*	*QGA32175*	*QJL32175*	*QJA32175*
200	1200	2400	*QBL32200*	*QBA32200*	*QDL32200*	*QDA32200*	*QGL32200*	*QGA32200*	*QJL32200*	*QJA32200*
225	1200	2400	*QBL32225*	*QBA32225*	*QDL32225*	*QDA32225*	*QGL32225*	*QGA32225*	*QJL32225*	*QJA32225*
250[6]	1200	2400	*QBL32250*	—	*QDL32250*	—	*QGL32250*	—	*QJL32250*	—

5. 3P circuit breakers are rated 65 kA at 240/120 Vac, 3Ø, 4-wire delta or 100 kA at 208Y/120 Vac, 3Ø, 4-wire.
6. 250 A is based on copper cable only.
7. On 3P I-Line circuit breakers, add a 6 at the end of the catalog number to indicate CBA jaw configuration. Nothing added indicates a standard ABC jaw configuration.

Terminations

Lug Configuration

Position three of the catalog number indicates the general lug configuration of the circuit breaker. PowerPact Q-frame circuit breakers have box-type lugs suitable for use with 4 AWG–300 kcmil (21–150 mm^2) aluminum or copper conductors. The 250 A circuit breaker allows copper conductors only.

- A = I-Line shroud on ON (I) end
- L = Lugs on both ends
- P = Lugs on OFF (O) end only
- E = I-Line bolt-on configuration
- M = Lugs on ON (I) end only
- F = No lugs (bus connection)

Special Terminations

Special terminal arrangements may be called out in the catalog number by adding a two-digit code following the ampere rating. The first digit of the special terminal code is always the letter “T”.

- TS = Studs on both ends (no nuts or washers)
- TN = Studs on OFF (O) end only (no nuts or washers)
- TP = Studs on ON (I) one only (no nuts or washers)
- TM = Studs on ON (I) end with nuts and washers

Control Wire Taps

Circuit breakers with control taps are identified in the catalog number through a two-digit code in the suffix. The first digit of the control tap code is always the letter “L”.

- LU = Control taps applied to ON (I) end
- LV = Control taps applied to OFF (O) end
- LW = Control taps applied to both ends

Special Features

Circuit breakers with special features are identified in the catalog number with a two-digit code following the ampere rating. The first digit of the special feature code is always the letter “Y”.

- YD = Calibration test report supplied
- YF = Fungus treatment
- YP = Handle padlock attachment, OFF (O) or ON (I) position
- YQ = Handle padlock attachment, OFF (O) position only

Other special terminations and special features are available. Contact the local Field Sales office for more information.

Multiple Options

When multiple options are required, they should be applied in the following order:

C—50°C ambient

T—Special terminations

L—Lug options

Y—Special options

Overcurrent Protection

PowerPact Q-frame circuit breakers contain individual thermal (overload) and magnetic (short circuit) sensing elements in each pole. The amperage ratings of the thermal trip elements are calibrated at 40°C (104°F) free air ambient temperature. Per the National Electric Code® (NEC®) standard rated circuit breakers can be applied continuously at a maximum of 80% of their rating.

Operating Mechanism

PowerPact Q-frame circuit breakers have an over-center toggle mechanism providing quick-make, quick-break operation. The operating mechanism is also trip-free, which allows tripping even when the circuit breaker handle is held in the ON (I) position. An internal cross bar provides common opening and closing of all poles with a single operating handle.

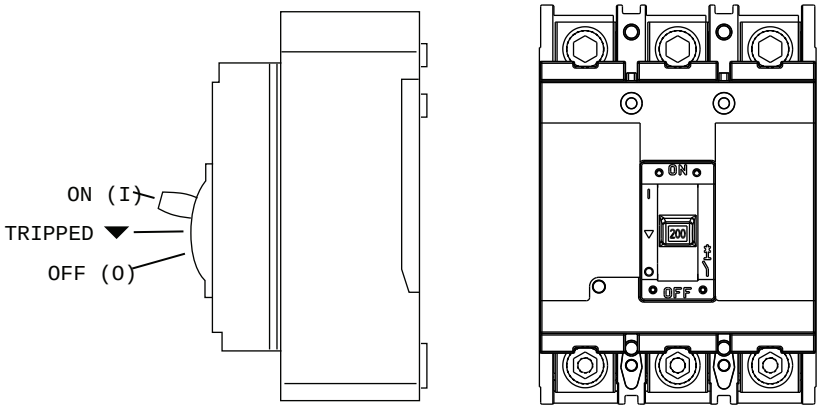
All PowerPact Q-frame circuit breakers have an integral push-to-trip button in the cover to manually trip the circuit breaker. This should be used as part of a regular preventive maintenance program.

Trip Indication

The PowerPact Q-frame circuit breaker handle can assume any of three positions, ON (I), tripped (ᵛ), or OFF (O) as shown in *Handle Position, page 11*.

The center tripped position provides positive visual indication that the circuit breaker has tripped. The circuit breaker can be reset by first pushing the handle to the extreme OFF (O) position. Power can then be restored to the load by pushing the handle to the ON (I) position.

Figure 1 - Handle Position



Standards

- PowerPact Q-frame circuit breakers are built in accordance with UL Standard 489 and NEMA Standard AB-1-1999.
- Q-frame circuit breakers are UL Listed for use in the United States and UL approved for use in Canada under UL File E84905 and Canadian Standard C22.2 No. 5–02.
- Circuit breakers are listed for use in Mexico with NOM-003–SCFI (under Mexican ANCE Standard NMX-J-266–ANCE).
- PowerPact Q-frame molded case switches are UL Listed under UL file E33117, approved for use in the United States and Canada.

Interrupting Ratings

Table 3 - Circuit Breaker Interrupting Ratings

Catalog Prefix	Ampere Rating		Number of Poles	UL Listed Interrupting Rating		Federal Specification (W-C-375B/GEN)
	Unit Mount	I-Line		208/120 Vac	240 Vac	
QB	70–250 A	70–225 A	2	10 kA	10 kA	12b
			3	10 kA	10 kA	12b
QD	70–250 A	70–225 A	2	25 kA	25 kA	14b
			3	25 kA	25 kA	14b
QG	70–250 A	70–225 A	2	65 kA	65 kA	15b
			3	65 kA	65 kA	15b
QJ	70–250 A	70–225 A	2	100 kA	100 kA	15b
			3	100 kA	—	—

Molded Case Switches

Two-pole (QB_2000S22) and three-pole (QB_32000S22) automatic molded case switches are available with a 225 A, 240 Vac, 10 kA rating. Automatic molded case switches contain magnetic tripping elements set high enough not to interfere with normal overload protective device operation but still protect the switch in the event of a short circuit. For Q-frame switches, this trip point is 4500 A. Molded case switches provide no other overcurrent protection and must be protected by an upstream circuit breaker or fuse.

Summary of Specifications

Table 4 - Specifications for UL and CSA Rated Q-Frame Circuit Breakers and Switches

Specification		Molded Case Circuit Breaker	Automatic Switch
Poles		2P and 3P	2P and 3P
Operating Voltage		240 Vac (208Y/120 for 3P at 100 kA)	240 Vac
Current Rating	Unit Mount	70–250 A	70–225 A
	I-Line	70–225 A	70–225 A
Rated Frequency		50–60 Hz	50–60 Hz
Interrupting Rating	QB	10 kA	10 kA
	QD	25 kA	—
	QG	65 kA	—
	QJ	100 kA	—
Certification Standards	UL489	File E84905	File E33117
	NEMA	AB-1-1999	—
	CSA C22.2 No. 5-02	File E84905	File E33117
	NOM	NOM-003–SCFI	NOM-003–SCFI
Mounting		Unit Mount and I-Line	Unit Mount and I-Line
Connectors	Lugs	4 AWG–300 kcmil (25–150 mm2)	4 AWG–300 kcmil (25–150 mm2)
	Studs	1/4–20	1/4–20
	I-Line	Plug-on and Bolt-on	Plug-on and Bolt-on
Connection		Forward or Reverse Fed	Forward or Reverse Fed
Temperature		40°C (104°F)	40°C (104°F)
Endurance Rating	C/O Cycle	1000 load, 5000 no load (6000 total)	1000 load, 5000 no load (6000 total)

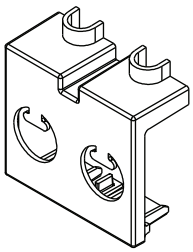
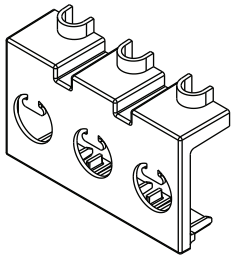
Table 5 - IEC Declared Ratings

Standards	Molded Case Circuit Breakers	Automatic Switches
Certification Standards	IEC 60947-2—1995 + A1:1997 + A2:2001	IEC 60947-2, Appendix L
Poles	2P and 3P	2P and 3P
Rated Current In	225 A	225 A
Rated Operational Voltage Ue	IEC 415Y/240 Vac	IEC 415Y/240 Vac
Rated Insulation Voltage Ui	750 Vac	750 Vac
Overcurrent Protection Device	—	Requires equivalent 225 A circuit breaker
Rated Conditional Short Circuit Current Icc	—	10 kA
Instantaneous Tripping Current Ii	—	2.5 kA
Rated Frequency	50–60 Hz	50–60 Hz
Rated Ultimate Short Circuit Breaking Capacity Ics	Icu = 10 kA	—
Rated Service Short Circuit Breaking Capacity Ics	50% of Icu	—
Classification	—	X
Connection Method	Forward or Reverse	Forward or Reverse
Suitable for Isolation	Yes (without padlock attachment)	Yes (without padlock attachment)
Impulse Voltage	6 kV	6 kV

Accessories

Service Barriers

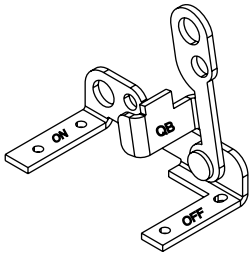
Barriers attach to line side service terminals to prevent inadvertent contact by persons or maintenance equipment. QSB2 and QSB3 comply with NEC 230.62 Service Equipment (C) Barriers requirement for service equipment. Available as a field-installable accessory. Refer to instruction bulletin GDE55811 Service Barrier for Q-Frame Unit Mount Circuit Breakers.

	Poles	Dimensions	Service Barrier Kit
	2	2.74 x 2.81 x 1.00 in. (69.5 x 71.4 x 25.5 mm)	*QSB2*
	3	2.74 x 4.30 x 1.00 in. (69.5 x 109.3 x 25.5 mm)	*QSB3*

Handle Padlock Attachment

The handle lock-off padlock attaches to the circuit breaker escutcheon for the two- or three-pole applications. The QBPA and QBPAL handle padlock attachments allow locking the handle in the ON (I) or OFF (O) position. The QBPAF and QOBPAFL handle padlock attachments allow locking in the OFF (O) position only. They are intended for use with the QBMIK mechanical interlock kit.

Figure 2 - Handle Padlock Attachment QBPA



Mechanical Interlocks

The QBMIK mechanical interlock kit is used with two circuit breakers to allow only one circuit breaker at a time to be in the ON (I) position.

Figure 3 - Mechanical Interlock Attachment QBMIK

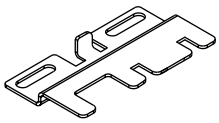


Table 6 - Handle Padlocking Devices for Q-Frame Circuit Breakers

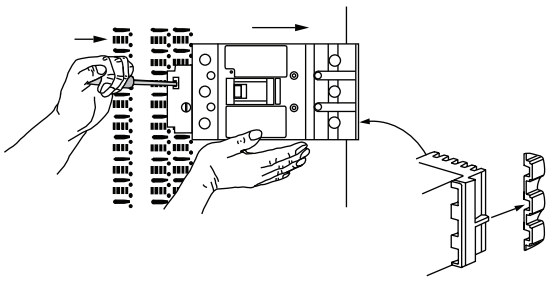
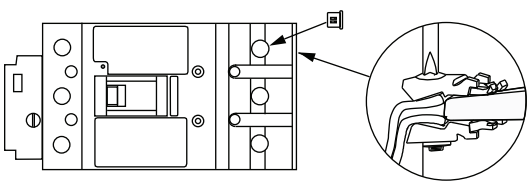
Attachment Kit	Function
QBPA	Locks OFF (O) or ON (I)
QBPAF	Locks OFF (O) only
QBPAL[8]	Locks OFF (O) or ON (I), left-had side of handle only
QBPAFL[8]	Locks OFF (O) only, left-had side of handle only
QBMIK	Allows only one circuit breaker to be turned ON (I) at a time

For further information refer to the following catalogs:

Catalog Title	Catalog number
NQ Circuit Breaker Panelboards	*1640CT0801*
I-Line™ Circuit Breaker Panelboards	*2110CT9701*
EZ Meter-Pak™ Meter Centers	*4100CT0701*
MP Meter-Pak™ Meter Centers	*4141CT0701*

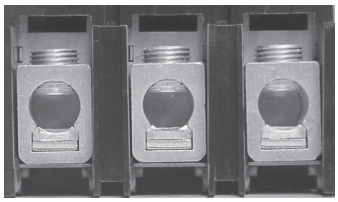
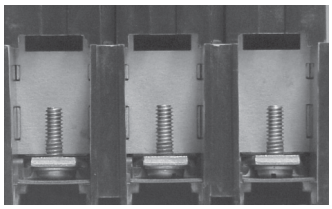
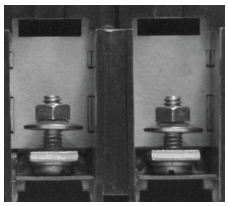
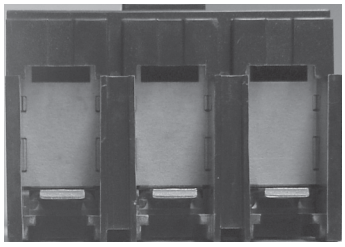
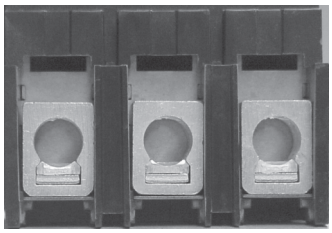
Lug Options

Table 7 - Lug Connector Combinations

Connector Type	Usage	Configuration
Standard I-Line Connection	ON (I) end only	
Bolt-on I-Line Connection	ON (I) end only	

8. The QBPAL and QBPALF handle padlocking devices mount on the left-hand side of the handle and are used with the circuit breaker mechanical interlock kit.

Table 7 - Lug Connector Combinations (Continued)

Connector Type	Usage	Configuration
Lug Connection	ON (I) and/or OFF (O) end	
Terminal Stud Connection	ON (I) and/or OFF (O) end	
Terminal Stud with Nut and Washer	ON (I) end only	
Bus Connection	ON (I) end only	
Control Tap Connection	ON (I) and/or OFF (O) end	

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP