Circuit Protection & Control Products
Powering business worldwide

As a global diversified power management company, we help customers worldwide manage the power needed for buildings, aircraft, trucks, cars, machinery and businesses.

Eaton’s innovative technologies help customers manage electrical, hydraulic and mechanical power more reliably, efficiently, safely and sustainably.

We provide integrated solutions that help make energy, in all its forms, more practical and accessible.

With 2013 sales of $20.0 billion, Eaton has approximately 100,000 employees around the world and sells products in more than 175 countries.

Energizing a world that demands more.

We deliver:

- Electrical solutions that use less energy, improve power reliability and make the places we live and work safer and more comfortable
- Hydraulic and electrical solutions that enable machines to deliver more productivity without wasting power
- Aerospace solutions that make aircraft lighter, safer and less costly to operate, and help airports operate more efficiently
- Vehicle drivetrain and powertrain solutions that deliver more power to cars, trucks and buses, while reducing fuel consumption and emissions

Discover today’s Eaton.
Circuit Protection & Control Products Quick Selection Guide

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Low Voltage Circuit Protection

IZMX Series Air Circuit Breakers

NZM Series Molded Case Circuit Breakers

LZM Series Molded Case Circuit Breakers

Industrial Control

Adjustable Frequency Drives

Control Relay EASY

EASY Safety Control Relay ES4P

Soft Start Controllers

SmartWire-DT®

XC PLC

M22 Pushbuttons and Indicating Lights

Position Switches LS
IZMX Series

Recommended Selection Examples

IZMX16 fixed 220VAC motorized example:

IZMX16B3-V16F  Fixed breaker, including 2a2b Aux contact
+IZMX-M16-230AD  220-240 VAC/DC Charging motor
+IZMX-ST230AD  220-240 VAC/DC Shunt trip
+IZMX-SR230AD  220-240 VAC/DC Closing spring release
+IZMX-AS22  Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS  Over current trip switch(OTS) 2CD
IZMX-THV163  Main terminal adapter - horizontal
EASY400-PDW  External power module to converter 220VAC to 24VDC to power trip unit

IZMX16 withdrawable 220VAC motorized example:

IZMX16B3-U16W  Withdrawable parent breaker, including 2a2b Aux contact
+IZMX-M16-230AD  220-240 VAC/DC Charging motor
+IZMX-ST230AD  220-240 VAC/DC Shunt trip
+IZMX-SR230AD  220-240 VAC/DC Closing spring release
+IZMX-AS22  Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS  Over current trip switch(OTS) 2CD
+IZMX-CAS163-1600  Cassette(including interphase barriers and handle)
+IZMX-SH163  Main terminal adapter - horizontal
IZMX-THV163  External power module to converter 220VAC to 24VDC to power trip unit

IZMX40 fixed 220VAC motorized example:

IZMX40B3-V16F  Fixed parent breaker, including 2a2b Aux contact
+IZMX-M40-230AD  220-240 VAC/DC Charging motor
+IZMX-ST230AD  220-240 VAC/DC Shunt trip
+IZMX-SR230AD  220-240 VAC/DC Closing spring release
+IZMX-AS22  Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS  Over current trip switch(OTS) 2CD
IZMX-THV403-3200  Main terminal adapter – horizontal (3200A and below)
EASY400-PDW  External power module to converter 220VAC to 24VDC to power trip unit

IZMX40 withdrawable 220VAC motorized example:

IZMX40B3-U16W  Withdrawable parent breaker, including 2a2b Aux contact
+IZMX-M40-230AD  220-240 VAC/DC Charging motor
+IZMX-ST230AD  220-240 VAC/DC Shunt trip
+IZMX-SR230AD  220-240 VAC/DC Closing spring release
+IZMX-AS22  Additional 2a2b Aux contact (4a4b total)
+IZMX-OTS  Over current trip switch(OTS) 2CD
+IZMX-CAS403-2000  Cassette(2000A and below)
+IZMX-SH403  Safety shutters
IZMX-THV403-3200  Main terminal adapter – horizontal (3200A and below)
EASY400-PDW  External power module to converter 220VAC to 24VDC to power trip unit

Option for ground fault protection:
- Add +IZMX-PXRV-G (V type trip unit) or +IZMX-PXRU-G(U type trip unit) for ground fault protection
- For 3-pole ACB, external neutral censor is recommended for ground fault protection. Order IZMX-CT16-N(IZMX16) or IZMX-CT40-N(IZMX40)
IZMX system overview

IZMX16

Unique parts and accessories for IZMX16

IZMX40

Interchangeable accessories between IZMX16 and IZMX40
1 IZMX Circuit-breaker
IZMX16: 630 - 1600A
IZMX40: 800 - 4000A

2 Cassette for withdrawable units
+IZMX-CAS163-1600 X16, 1600A, 3P
+IZMX-CAS164-1600 X16, 1600A, 4P
+IZMX-CAS403-2000 X40, 2000A, 3P
+IZMX-CAS404-2000 X40, 2000A, 4P
+IZMX-CAS403-2500 X40, 2500A, 3P
+IZMX-CAS404-2500 X40, 2500A, 4P
+IZMX-CAS403-3200 X40, 3200A, 3P
+IZMX-CAS404-3200 X40, 3200A, 4P
+IZMX-CAS403-4000 X40, 4000A, 3P
+IZMX-CAS404-4000 X40, 4000A, 4P

3 Main terminal kits
Universal terminals, 3- and 4-pole horizontal/vertical
IZMX-TMP163 X16, 3P
IZMX-TMP164 X16, 4P
IZMX-TMP403-3200 X40, 3P, 3200A
IZMX-TMP404-3200 X40, 4P, 3200A
IZMX-TMP403 X40, 3P, 4000A, horizontal
IZMX-TMP404 X40, 4P, 4000A, horizontal
IZMX-TMP403 X40, 3P, 4000A, vertical
IZMX-TMP404 X40, 4P, 4000A, vertical

4 Safety Shutter
+IZMX-SH163 X16, 3P
+IZMX-SH164 X16, 4P
+IZMX-SH403 X40, 3P
+IZMX-SH404 X40, 4P

5 Motor operator
Automatic charging of the spring force storage for remote or local operations
+IZMX-MOP16-24DC X16, 24VDC
+IZMX-MOP16-110AD X16, 110VAC/DC
+IZMX-MOP16-230AD X16, 220VAC/DC
+IZMX-MOP40-24DC X40, 24VDC
+IZMX-MOP40-110AD X40, 110VAC/DC
+IZMX-MOP40-230AD X40, 220VAC/DC

6 Current sensor for neutral conductor
Current sensor for sensing the neutral-conductor current.
IZMX-CS16-1 X16
IZMX-CS40-1 X40

7 Levering tool
Convenient collapsible lev-in tool for lev-in and out operation of the Breaker in and out of the Cassette. The lev-in tool is stored inside the breaker. Included in D/O breaker order

8 Position cell switches
Cell switch signals the position of the breaker inside of the cassette. Connect, Test and Disconnect Position.
IZMX-CS16-1 X16
IZMX-CS40-1 X40

9 Door escutcheon
Closes the gap between Breaker and Switchgear-door.
IP41 included in breaker
For IP56: IZMX-DHC16-W X16
IZMX-DHC40-W X40

10 Communication modules
External modules
IZMX-MCAM Modbus
IZMX-ECAM Ethernet
IZMX-PCAM Profield DP

11 Control circuit terminal units
Modular design

12 Latch check switch
For external application
+IZMX-LCS

13 Latch check switch
For use with closing release.
+IZMX-LCS-SR

14 Closing releases
Closes the breaker by an electrical signal.
+IZMX-SR24DC 24VDC
+IZMX-SR110AD 110VAC/DC
+IZMX-SR230AD 220VAC/DC

15 Key locking
Locking of the breaker by a keylock.
IZMX-KLNO-240-GE
IZMX-KLNO-240-ARC
IZMX-KLNO-240-ARC
IZMX-KLNO-240-ARC

16 Shunt releases
Opens the breaker by an electrical signal.
+IZMX-ST24DC 24VDC
+IZMX-ST110AD 110VAC/DC
+IZMX-ST230AD 220VAC/DC

17 Undervoltage releases
Opens the breaker by a voltage-drop in the control circuit.
+IZMX-UVR24DC 24VDC
+IZMX-UVR110AD 110VAC/DC
+IZMX-UVR220AD 220VAC/DC
+IZMX-UVR400AC 380VAC

18 Red-pop trip indicator
Red-pop trip indicator signals a trip by the trip unit
Included in breaker with trip unit

19 Trip indicator switches
Overcurrent trip switch (OTS) signals a trip by the trip unit.
+IZMX-OTS

20 Switching operations counters
Counts the number of operations.
+IZMX-OC

21 Auxiliary contacts
Signaling switch ON-OFF, 2a2b standard. 4a4b maximum for IZMX16 and 12a12b for IZMX40
+IZMX-ASC2 X16/X40, add 2a2b
+IZMX-ASC4 X40, add 4a4b
+IZMX-ASC6 X40, add 6a6b
+IZMX-ASC8 X40, add 8a8b
+IZMX-ASC10 X40, add 10a10b

22 Locking facilities
Plastic or metal
IZMX-LPL16-F X16, plastic
IZMX-LPL16-M X16, metal
IZMX-LPL16-P X40, plastic
IZMX-LPL16-M X40, metal

23 Trip unit
PX50, V-type, current metering
C - Onboard Modbus
G - Ground fault protection
M - Arcflash Reduction Maintenance System™
+IZMX-PXR-C
+IZMX-PXR-5
+IZMX-PXR-10
+IZMX-PXR-15
+IZMX-PXR-20
+IZMX-PXR-25
+IZMX-PXR-30
+IZMX-PXR-35
+IZMX-PXR-40

24 Trip unit
PX50, U-type, power metering
+IZMX-PXRU-U
+IZMX-PXRU-M
+IZMX-PXRU-UM

Unique parts and accessories for IZMX40
IZMX16, INX16, IZMX40, INX40

Circuit Protection & Control Products Quick Selection Guide
Air Circuit Breaker
IZM Series NES Type*

| Breaker Frame Size | N | E | S6 | 08 | W | 52 | R | T | R | N | 4 | 5 | N | 4 | X |
|--------------------|---|---|----|----|---|----|---|---|---|---|----|----|---|----|---|---|
| Standard, Mechanism, Device | E = IEC 60947-2 |
| Fault Current Rating | S4 = 42 kA at 415 Vac IEC |
| | S5 = 50 kA at 415 Vac IEC |
| | S6 = 85 kA at 415 Vac IEC |
| Frame Rating (Amperes) | 07 = 630 |
| | 08 = 800 |
| | 10 = 1000 |
| | 13 = 1250 |
| | 16 = 1600 |
| Poles, Phasing | 3 = Three-pole, ABC |
| | 4 = Four-pole, NABC |
| Mounting Configuration | W = Drawout |
| | B = Fixed mount rear connect, mounting bracket, with secondary terminal row |
| Trip Unit, Power Supply | SW = Switch—no MCR—42 kA for IEC |
| | Z2 = 520 Li, no ZSI |
| | S2 = 520 LSI, no ZSI |
| | S3 = 520 LSI, with ZSI |
| | S4 = 520 LSIG, no ZSI |
| | S5 = 520 LSIG, with ZSI |
| | M2 = 520M LSI, no ZSI, 24 Vdc |
| | M3 = 520M LSI, with ZSI, 24 Vdc |
| | MA = 520MLSIA, with ZSI, 24 Vdc |
| | MB = 520MLSIA, with ZSI, 24 Vdc |
| | MG = 520MLSIG, no ZSI, 24 Vdc |
| | MH = 520MLSIG, with ZSI, 24 Vdc |
| | R2 = 520MLSIG, with ZSI, 24 Vdc, with ARMS |
| | R3 = 520MLSIG, with ZSI, 24 Vdc, with ARMS |
| | RA = 520MLSIG, with ZSI, 24 Vdc, with ARMS |
| | RB = 520MLSIG, with ZSI, 24 Vdc, with ARMS |
| | RG = 520MLSIG, with ZSI, 24 Vdc, with ARMS |
| UVR, Second Shunt Trip | N = None |
| | A = 110–125 Vac/Vdc; UVR |
| | B = 220–250 Vac/Vdc; UVR |
| | L = 24 Vdc; UVR |
| | H = 48 Vdc; UVR |
| | S = 60 Vdc; UVR |
| | G = 12 Vdc; UVR |
| | F = 110–127 Vac/Vdc; second shunt trip |
| | C = 208–240 Vac/Vdc; second shunt trip |
| Spring Release, Latch Check Switch | F = 24 Vdc, second shunt trip |
| 4 = 48 Vdc, second shunt trip |
| Motor Operator | M = Manually operated |
| | B = 110–125 Vac/dc |
| | T = 208–250 Vac/dc |
| | L = 24 Vdc |
| | H = 48 Vdc |
| Auxiliary, Switches, Label Language | E = No auxiliary switches, no label (parent) |
| | 4 = 4 Form C, English |
| Trip Indicator and Bell Alarm | N = None |
| | A = 1 Form C |
| | B = Yes (plastic/plastic) |
| | C = Yes (plastic/plastic) |
| Secondary Terminal Blocks | OTS = Interlock trip indicator |
| | N = None |
| | 5 = Provided |
| Padlock Provisions | Key Lock Provisions | Operations Counter |
| | N = None |
| | A = No |
| | B = Provided |
| | C = No |

*IZM series NES type air circuit breaker will be phased-out by Dec 31st 2015 and be replaced by IZMX series*
IZM Series MWI Type*

**Breaker Frame**
- 1 = Standard or double

**Trip Indicator**
- Keylock
- P
- R
- A
- MT
- 12
- 4
- L
- E
- A
- 12
- N
- N
- W
- X

**Continuous and Phasing (Facing Front of Breaker)**
- 08 = 600 ABC
- 10 = 600 ABC
- 12 = 480 ABC
- 16 = 480 ABC
- 20 = 200 ABC
- 25 = 250 ABC
- 32 = 320 ABC
- 41 = 400 ABC
- 4N = 400A ABB
- 5N = 500A ABB
- 6N = 600A ABB

**Mounting Configuration and Load Terminals**
- H = Fixed horizontal
- V = Fixed vertical
- L = Drawout horizontal

**Nameplate Language**
- E = English

**Sensor and Rating Plug Rating**
- NN = None
- 02 = 200
- 05 = 250
- 06 = 300
- 07 = 300
- 08 = 500
- 09 = 500
- 10 = 1000
- 13 = 1250
- 16 = 1600
- 20 = 2000
- 25 = 2500
- 32 = 3200
- 41 = 4000 ABC

**Poles and Neutral (Facing Front of Breaker)**
- 3 = Three
- 4 = Four (neutral left)

**ACB Shipping Instructions**
- A = Fixed ACB with door kit
- B = D/O ACB only with door kit
- W = D/O ACB in cassette

**Future Use**
- X = All ACBs

**Future Use**
- A = D/O ACB
- L = LCS wired to SRD
- C = LCS wired external

**Shunt Trip Attachment (STA)**
- N = None
- A = 110–127 Vac/Vdc
- R = 208–240 Vac/Vdc
- C = 24 Vac
- H = 48 Vac
- B = 110–127 Vac/Vdc
- S = 208–240 Vac/Vdc
- D = 40 Vac
- T = 220–240 Vac/Vdc
- L = 24 Vac
- K = 48 Vac

**Motor Operator**
- N = Manual operated
- A = 110–127 Vac/Vdc
- R = 208–240 Vac/Vdc
- C = 24 Vac
- H = 48 Vac

**Spring Release Device (SRD)**
- N = None
- A = 110–127 Vac/Vdc
- R = 208–240 Vac/Vdc
- C = 24 Vac
- H = 48 Vac

**Undervoltage Release (UVR) or 2nd Shunt Trip (ST)**
- N = None
- A = UVR (110–127 Vac)
- R = UVR (208–240 Vac)
- C = UVR (24 Vac)
- H = UVR (48 Vac)
- E = UVR (110–125 Vac)
- F = UVR (220–250 Vac)
- G = UVR (32 Vac)
- X = UVR (380–415 Vac)
- J = UVR (480 Vac)
- K = UVR (800 Vac)
- 1 = 2nd ST (110–127 Vac)
- 2 = 2nd ST (208–250 Vac)
- 3 = 2nd ST (24 Vac)
- 4 = 2nd ST (48 Vac)
- 5 = 2nd ST (110–127 Vac)

**Bell Alarms Switch (OTS) with 2a/2b Contacts and/or Mechanical Trip Indicator**
- N = None
- 0 = No OTS
- 4 = 4A/48
- 5 = 5A/68

**Latch Check Switch/Trip Unit**
- Metering Voltage Connection
- for Digitrip 1150 Trip Unit

**Latch Check Switch**
- 1150 Voltage Connection
- N = None
- L = LCS wired to SRD
- C = LCS wired external

**Operations Counter and/or Keylock Provisions**
- N = No counter
- K = Kirk lock
- C = Castell lock
- R = Ronis lock
- A = Counter
- Y = Counter
- L = Counter
- H = Counter

**Padlock Provisions for Blocking Close and/or Open ACB Manual Pushbuttons**
- N = None
- P = Block (close and open)

**Auxiliary Switch**
- N = None
- 4 = 4A/48
- 5 = 5A/68

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* IZM series MWI type air circuit breaker will be phased-out by Dec 31st 2015 and be replaced by IZMX series*

**Note**
1. Exclusory rules apply. Refer to price list. Confirm all final part numbers with Eaton. Format structure subject to modifications and additions without notice.
2. Position 20, ACB (with digitrip) must choose “L”, switch-disconnector must choose “E”.

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Circuit Protection & Control Products Quick Selection Guide
Air Circuit Breaker
NZM Series Molded Case Circuit Breaker

**Designation**
- NZM = Circuit breaker
- N = Disconnector, with trip
- PN = Disconnector, without trip

**Frame Size**
- 1 = 20A-160A
- 2 = 125A-250A
- 3 = 400A-630A
- 4 = 630A-1600A

**Breaking Capacity**
- B = 25 kA
- C = 36 kA
- N = 50 kA
- S = 70 kA
- H = 85, 100, 150 kA

**Trip Unit**
- A = Thermomagnetic system protection
- AE = Electronic system protection
- M = Thermomagnetic motor protection
- ME = Electronic motor protection
- S = Motor protection without overload release
- VE = Electronic selective system protection

**Ampere Rating**
- 20A-1600A

**Poles**
- Blank = 3 Pole
- 4 = 4 Pole

LZM Series Molded Case Circuit Breaker

**Designation**
- LZM = Circuit breaker

**Frame Size**
- 1 = 20A-160A
- 2 = 125A-250A
- 3 = 400A-630A
- 4 = 630A-1600A

**Breaking Capacity**
- B = 25 kA
- C = 36 kA
- N = 50 kA
- S = 70 kA

**Trip Unit**
- A = Thermomagnetic system protection
- AE = Electronic system protection
- S = Motor protection without overload release
- VE = Electronic selective system protection

**Ampere Rating**
- 20A-630A

**Poles**
- Blank = 3 Pole
- 4 = 4 Pole
### BZM Series Molded Case Circuit Breaker

- **Designation**
  - BZM = Circuit breaker used for building

- **Breaking Capacity**
  - E = 18 kA (Only for Frame 1)
  - B = 25 kA
  - C = 36 kA
  - N = 50 kA (Only for Frame 3)

- **Frame Size**
  - 1 = 16A-125A
  - 2 = 125A-250A
  - 3 = 250A-400A

- **Terminal**
  - Blank = Cable terminal
  - BT = Box terminal

- **Ampere Rating**
  - 16A-400A

### FAZ Miniature Circuit Breaker

- **Designation**
  - FAZ = MCB (10/15kA rated breaking capacity)

- **Ampere Rating**
  - 0.16~63A

- **Standard**
  - Blank = AC
  - DC = DC

- **AC/DC**
  - Blank = IEC standard
  - -NA = UL489 based, lift terminal
  - -RT = UL489 based, ring-tongue terminal

- **Poles**
  - 1 = 1P
  - 2 = 2P
  - 3 = 3P
  - 4 = 4P
  - 1N = 1P+N
  - 3N = 3P+N

- **Tripping Characteristic**
  - B = B curve
  - C = C curve
  - D = D curve
  - K = K curve
  - S = S curve
  - Z = Z curve
Xpole Miniature Circuit Breaker

**Designation**
- **PL** = Xpole MCB

**Rated Breaking Capacity**
- **S6** = 6kA
- **SM** = 10kA
- **N6** = 6kA (1P+N, 1.5 MU width)
- **Z6** = 6kA (1P+N, 1.5 MU width)
- **ZM** = 10kA (1P+N, 1.5 MU width)
- **HT** = 15-25kA (high-rating MCB)

**Ampere Rating**
- **PL 100**
- **PFDM**

**Tripping Characteristic**
- **B** = B curve
- **C** = C curve
- **D** = D curve

**AC/DC**
- **Blank = AC**
- **-DC = DC**

**Poles**
- **/1** = 1 Pole
- **/2** = 2 Pole
- **/3** = 3 Pole
- **/4** = 4 Pole
- **/1N** = 1 Pole + Neutral
- **/3N** = 3 Pole + Neutral

**Rated Breaking Capacity**
- **S6** = 6kA
- **SM** = 10kA
- **N6** = 6kA (1P+N, 1.5 MU width)
- **Z6** = 6kA (1P+N, 1.5 MU width)
- **ZM** = 10kA (1P+N, 1.5 MU width)
- **HT** = 15-25kA (high-rating MCB)

**Xpole Residual Current Device (RCCB)**

**Designation**
- **PFIM** = Up to 100A
- **PFDM** = 125A

**Ampere Rating**
- **PFIM**
- **PFDM**

**RCD Type**
- **Blank = AC type, no delay**
- **-A = A type, no delay**
- **-G = Minimum 10ms delay, 3kA surge current proof**
- **-G/A = A type, minimum 10ms delay, 3kA surge current proof**
- **-S = Minimum 40ms delay, selective, 5kA surge current proof**
- **-S/A = A Type, selective, minimum 40ms delay, 5kA surge current proof**

**Poles**
- **2 = 2 pole**
- **4 = 4 pole**

**Fault Current**
- **001 = 10mA**
- **003 = 30mA**
- **01 = 100mA**
- **03 = 300mA**
- **05 = 500mA**
Xpole Residual Current Device (RCD)

**Designation**
- **PBSM** = ELM type, 2/3/4 poles, 40/63A
- **PBHT** = ELM type, 2/4 poles, 80/125A
- **PDB** = ELN type, 2/3/4 poles, 40/63A
- **EDB** = ELN type, 2/3/4 poles, 40/63A
- **EB6** = ELM type, 2/3/4 poles, 40/63A

**Ampere Rating**
- 40, 63, 80, 125 A

**Poles**
- 2 = 2 pole
- 3 = 3 pole
- 4 = 4 pole

**Fault Current**
- 003 = 30mA
- 01 = 100mA
- 03 = 300mA

Xpole Residual Current Device (RCBO)

**Designation**
- **PFL10** = 10kA, 1P+N, ELM type
- **PFL9** = 6kA, 1P+N, ELM type
- **PLD10** = 10kA, 1P+N, ELM type
- **PLD9** = 6kA, 1P+N, ELM type
- **PKNM** = 10kA, 1P+N, ELM type
- **eR66** = 6kA, 1P+N (18mm width), ELN type
- **eRBM** = 10kA, 1P+N (18mm width), ELN type
- **ED6** = 6kA, 1P+N, ELN type

**Tripping Characteristic**
- **B** = B curve
- **C** = C curve
- **D** = D curve

**RCD Type**
- Blank = AC type, no delay
- **-A** = A type, no delay
- **-G** = Minimum 10ms delay, 3kA surge current proof
- **-S** = Minimum 40ms delay, selective, 5kA surge current proof
- **-S/A** = A Type, selective, minimum 40ms delay, 5kA surge current proof

**Regional Version**
- Blank = Global
- **-AS** = Asia

**Ampere Rating**
- 2-45A

**Fault Current**
- 003 = 10mA
- 005 = 30mA
- 01 = 100mA
- 03 = 300mA
**Xpole Main Load Disconnector Switch (Isolator)**

**Designation**
- **IS** = Isolator

**Ampere Rating**
- 16, 20, 25, 32, 40, 63, 80, 100, 125A

**Poles**
- 1 = 1 pole
- 2 = 2 pole
- 3 = 3 pole
- 4 = 4 pole

**Xpole Z-R Installation Relay**

**Designation**
- **Z** = Installation relay

**Control Voltage**

<table>
<thead>
<tr>
<th>AC</th>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12 = 12 Vac</td>
<td>R11 = 12 Vdc</td>
</tr>
<tr>
<td>R24 = 24 Vac</td>
<td>R23 = 23 Vdc</td>
</tr>
<tr>
<td>R48 = 48 Vac</td>
<td>R109 = 110 Vdc</td>
</tr>
<tr>
<td>R110 = 110 Vac</td>
<td>R230 = 230 Vac</td>
</tr>
</tbody>
</table>

**Auxiliary Contact**
- **S** = 1NO
- **O** = 1NC
- **SS** = 2NO
- **SO** = 2NC
- **GO** = 2NC
- **2S2O** = 2NO + 2NC
- **3S1O** = 3NO + 1NC
Xpole Z-SCH Installation Contactor

**Designation**
Z-SCH = Installation contactor

**Control Voltage**
- 24 = 24 Vac
- 230 = 230 Vac

**Ampere Rating**
- 25, 40, 63A

**Auxiliary Contact**
- 40 = 4NO
- 04 = 4NC
- 31 = 3NO + 1NC
- 22 = 2NO + 2NC
- 20 = 2NO

Z-SCH - 230 / 25 - 40

Surge Protection Device (SPD)—SPI

**Designation + Class**
- SP = Surge protection
- I = IEC Class I (former Class B)

**Impulse Current I_{imp} (10/350) µs**
- 35 = 35kA
- 50 = 50kA
- 100 = 100kA

**Poles**
- Blank = 1P
- /3 = 3P

**Maximum Continuous Operating Voltage Uc (Vac)**
- 440 = 440Vac
- NPE = NPE module, 265Vac

SPI - 35 / 440 /3
## Surge Protection Device (SPD)—SPB/SPC/SPD/SPE

**Designation**

- **SP**: Surge protection

**Class**

- **BT12**: I+II combined type (12.5kA 10/350µs)
- **CT2**: Class II (20kA 8/20µs)
- **ET2**: Class II (10kA 8/20µs)
- **DT3**: Class III

**Maximum Continuous Operating Voltage \(U_c\) (Vac)**

- **BT12**: 280, 335
- **CT2**: 75, 135, 175, 280, 335, 385, 460, 580
- **ET2**: 280, 335
- **DT3**: 280, 335

**Whether Supplied With Busbar**

- **Blank**: No busbar
- **/BB**: Supplied with busbar

**Poles**

- **Blank**: Insert module
- **/1**: 1P
- **/2**: 2P
- **/3**: 3P
- **/4**: 4P
- **/1+NPE**: 1P+N
- **/3+NPE**: 3P+N

### NSP Series Surge Protection Device

**Designation**

- **NSP**: New surge protection device

**Nominal Discharge Current (8/20) µs \(I_n\)**

- **20**: \(I_n\), 20kA, \(I_{max}\), 40kA
- **30**: \(I_n\), 30kA, \(I_{max}\), 60kA
- **40**: \(I_n\), 40kA, \(I_{max}\), 80kA
- **60**: \(I_n\), 60kA, \(I_{max}\), 120kA

**Module Number**

- **Blank**: Insert module
- **/1**: 1P
- **/2**: 2P or 1P+N
- **/3**: 3P
- **/4**: 4P or 3P+N

**System Power Type**

- **IEC**: Single module
- **TN**: TN system (2P)
- **TNC**: TNC system (3P)
- **TNS**: TNS system (4P)
- **TT**: TT system (1P+N or 3P+N)

**Remote Signaling**

- **Blank**: None
- **R**: With remote signaling

**Technology Type**

- **M**: MOV
- **S**: Dual-MOV or Spark-gap
- **G**: Gas discharge tube
- **H**: Hybrid type

**Maximum Continuous Operating Voltage \(U_c\) (Vac)**

- **385**: 385 Vac
MATS Automatic Transfer Switch (MCB based)

- Designation: MATS
- Controller: A = Basic, B = Generator, C = Intelligence
- Break Capability: C = 36kA, N = 50kA, S = 70kA

MATS Automatic Transfer Switch (MCCB based)

- Designation: MATS
- Controller: A = Basic, B = Generator, C = Intelligence
- Break Capability: C = 36kA, N = 50kA, S = 70kA

MCB Selection Guide

- Breaker: PL9, 6kA;
- Trip curve: C type or D type;
- Amperes: 0.5, 1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63A;
- Controller: A type only.

- Controller: A, B, C;
- Break: LZM;
- Imm: 1: 160A, 2: 250A, 3: 630A;
- Break capability: C-36kA, N-50kA, S-70kA;
- Protective unit: A: Thermomagnetic trip; AE: Electronic tripping device;
- Amperes: 1: 20, 25, 32, 40, 50, 63, 80, 100, 125, 160A; 2: 160, 200, 250A; 3: 320, 400, 500, 630A.

- Designation: MATS
- Controller: A = Basic
- Imm: PL9 = 63A
- Trip Curve: C type, D type
- Amperes: 0.5-63
MATS Series Automatic Transfer Switch (Disconnect based)

<table>
<thead>
<tr>
<th>Type</th>
<th>Switch</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATS</td>
<td>G</td>
<td>400 / 3</td>
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<td>32 = 32 A</td>
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<td></td>
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<td>40 = 40 A</td>
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<td>63 = 63 A</td>
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<td>80 = 80 A</td>
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<td>3 = 3 Pole</td>
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<td>3 = 3 Pole</td>
</tr>
<tr>
<td>4 = 4 Pole</td>
<td></td>
<td>4 = 4 Pole</td>
</tr>
</tbody>
</table>
Contactor-based Automatic Transfer Switch

- **Type**
  - AT = Automatic
  - BI = Bypass Isolation (open transition)
  - CB = Bypass Isolation (closed transition)
  - CT = Closed Transition
  - DT = Delayed Transition
- **Mechanism**
  - CI = Closed Transition
  - C2 = Two-position Transition
  - C3 = Three-position Transition
- **Enclosure**
  - K = Open
  - S = NEMA 1
  - J = NEMA 12
  - R = NEMA 3R
- **Voltage**
  - A = 120V, 60 Hz
  - B = 208V, 60 Hz
  - D = 100V, 60 Hz
  - E = 600V, 60 Hz
  - G = 220V, 50 Hz
  - H = 380V, 50 Hz
  - K = 600V, 50 Hz
  - M = 230V, 50 Hz
  - N = 401V, 50 Hz
  - O = 415V, 50 Hz
  - W = 240V, 60 Hz
- **Orientation**
  - C = Contact
- **Logic**
  - 0 = Automatic
  - 3 = Bypass
- **Amperes**
  - 0040 = 40A
  - 0080 = 80A
  - 0100 = 100A
  - 0150 = 150A
  - 0200 = 200A
  - 0225 = 225A
  - 0260 = 260A
  - 0400 = 400A
  - 0600 = 600A
  - 0800 = 800A
  - 1000 = 1000A
  - 1200 = 1200A

Industrial Molded-Case Transfer Switch

- **Type**
  - AT = Automatic
  - MT = Manual
  - NT = Non-Automatic
  - MB = Maintenance Bypass
- **Frame Size (Amperes)**
  - FD = 30–115A
  - KD = 225–300A
  - LD = 400A
  - MD = 600A
  - NB = 800–1000A
- **Orientation**
  - C = Horizontal
  - V = Vertical
- **Logic**
  - 0 = Automatic
  - 3 = Bypass
  - 1 = No Logic
  - E = Electromechanical
- **Amperes**
  - 0030 = 30A
  - 0070 = 70A
  - 0100 = 100A
  - 0150 = 150A
  - 0200 = 200A
  - 0225 = 225A
  - 0300 = 300A
  - 0400 = 400A
  - 0600 = 600A
  - 0800 = 800A
  - 1000 = 1000A
  - 1200 = 1200A

- **Certification**
  - U = UL listed
  - R = UL recognized
  - X = No listing

- **Switch**
  - A = S1 (MCS) S2 (MCS)
  - B = S1 (MCB) S2 (MCB)
  - C = S1 (MCB) S2 (MCS)
  - D = S1 (MCS) S2 (MCB)

- **Number of Poles**
  - 1 = Two-pole
  - 3 = Three-pole
  - 4 = Four-pole
# Magnum-based Transfer Switches

**Type**
- AT = Automatic
- CT = Closed transition
- BI = Bypass transition
- CB = Closed transition bypass isolation
- NT = Non-auto

**Frame Size (Amperes)**
- MG = Magnum DS

**Number of Poles**
- 2 = Two-pole
- 3 = Three-pole
- 4 = Four-pole

**Orientation**
- V = Vertical

**Logic**
- C = ATC-500
  - ATC-5000 (open transition)
- I = ATC-800 (closed transition)

**Switch**
- A = Fixed mount, power case switch (PCS) both
- B = Fixed mount, power case circuit breaker (PCB) both
- C = Fixed mount, PCB normal, PCS emergency
- D = Fixed mount, PCS normal, PCB emergency
- E = Drawout, PCS both
- F = Drawout, PCB both
- G = Drawout, PCB normal, PCS emergency
- H = Drawout, PCS normal, PCB emergency

**Amperes**
- 0200 = 200A
- 0300 = 300A
- 0400 = 400A
- 0600 = 600A
- 0800 = 800A
- 1000 = 1000A
- 1200 = 1200A
- 1600 = 1600A
- 2000 = 2000A
- 2500 = 2500A
- 3200 = 3200A
- 4000 = 4000A
- 5000 = 5000A

**Certification**
- U = UL listed
- R = UL recognized
- X = No listing

**Enclosure**
- S = NEMA 1
- R = NEMA 3R
- T = Through-the-door design

**Voltage**

<table>
<thead>
<tr>
<th>Switch</th>
<th>Number of Poles</th>
<th>Voltage</th>
<th>Frame Size (Amperes)</th>
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<td>200A</td>
<td>120V</td>
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<tr>
<td>B</td>
<td>300A</td>
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<tr>
<td>C</td>
<td>400A</td>
<td>600V</td>
<td>60 Hz</td>
</tr>
<tr>
<td>D</td>
<td>600A</td>
<td>220/127V</td>
<td>50 Hz</td>
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<tr>
<td>E</td>
<td>800A</td>
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<td>I</td>
<td>2000A</td>
<td>380V</td>
<td>50 Hz</td>
</tr>
<tr>
<td>J</td>
<td>2500A</td>
<td>240V</td>
<td>50 Hz</td>
</tr>
<tr>
<td>K</td>
<td>3200A</td>
<td>415/240V</td>
<td>50 Hz</td>
</tr>
<tr>
<td>L</td>
<td>4000A</td>
<td>240V</td>
<td>60 Hz</td>
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<tr>
<td>M</td>
<td>5000A</td>
<td>401/230V</td>
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<td>N</td>
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<tr>
<td>O</td>
<td>8000A</td>
<td>415V</td>
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<tr>
<td>P</td>
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<td>Q</td>
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<td>T</td>
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</tr>
<tr>
<td>Z</td>
<td>70000A</td>
<td>240V</td>
<td>60 Hz</td>
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</tbody>
</table>
Circuit Protection & Control Products Quick Selection Guide

**Metering Devices**

### IQ130/140/150 Meter

- **Model Series**
  - 130 = Volts/amps
  - 140 = Power
  - 150 = Energy

- **Frequency**
  - 5 = 50 Hz system
  - 6 = 60 Hz system

- **Power Supply**
  - 1 = 90–265 Vac/dc
  - 4 = 24–48 Vdc

- **Communications**
  - 0 = None
  - 1 = Modbus RTU and KYZ pulse
  - 2 = Modbus TCP and KYZ output (RJ45)

- **Meter Type**
  - M = Meter (with integral display)
  - T = Transducer only (no display)

- **Current Input**
  - 1 = 1A secondary
  - 5 = 5A secondary

### IQ250/260 Meter

- **Model Series**
  - 250 = Energy
  - 260 = Power quality

- **Data Logging**
  - A = None
  - L = Data logging

- **Frequency**
  - 5 = 50 Hz system
  - 6 = 60 Hz system

- **Power Supply**
  - 1 = 90–265 Vac/dc
  - 4 = 24–60 Vdc

- **I/O Slot 1**
  - 0 = None
  - 1 = Two relay outputs/two status inputs
  - 2 = Four KYZ pulses/four status inputs
  - 3 = Four analog outputs: 0–1 mA
  - 4 = Four analog outputs: 4–20 mA

- **I/O Slot 2**
  - 0 = None
  - 1 = Two relay outputs/two status inputs
  - 2 = Four KYZ pulses/four status inputs
  - 3 = Four analog outputs: 0–1 mA
  - 4 = Four analog outputs: 4–20 mA
### Power Xpert Meter 2000

**Model Series**
- **2250**: Energy meter
- **2260**: Power quality meter
- **2270**: Power quality plus meter
- **2280**: Power quality plus with up to 64 samples/cycle waveform recording meter
- **2290**: Power quality plus with up to 512 samples/cycle recording meter

**Power Supply**
- 1: 90–265 Vac/Vdc
- 4: 24–60 Vdc

**Current Input**
- 1: 1A secondary
- 5: 5A secondary

**I/O Slot 2**
- 9 = Gateway card

**I/O Slot 1**
- 0 = None
- 1 = 2 Relay outputs/2 status inputs
- 2 = 4 KYZ pulses/4 status inputs
- 3 = 4 Analog outputs: 0–1 mA
- 4 = 4 Analog outputs: 4–20 mA

**Meter Type**
- M = Meter (with integral display)
- T = Transducer only (no display)

**Frequency**
- 5 = 50 Hz system
- 6 = 60 Hz system

**Example 1:** PXM8251A5BB (PXM 8000 meter, w/ VAUX, std. pwr., com. exp. and I/O cards)

**Example 2:** PXM6251A6BA (PXM 6000 meter, w/ VAUX, std. pwr., com. exp. card)

### Power Xpert Meter 4000/6000/8000

**Model Series**
- **4 = 4000**: Standard power quality, 2 GB
- **6 = 6000**: Enhanced power quality, 4 GB
- **8 = 8000**: Premium PQ w/ transient capture, 8 GB

**Voltage Input Configuration**
- 0 = Standard (V1, V2, V3, V4)
- 2 = Standard plus auxiliary (V5, V6, V7, V8)

**Power Supply Configuration**
- 1 = Standard 100–240 Vac or 110–250 Vdc power supply
- 4 = 24–48 Vdc option (future option)

**Card Slot 3 Configuration**
- A = No card option
- B = Communication expansion card for LAN/WAN Ethernet networking w/10/100Base-T, 100F, RS-485, RS-232 ports

**Card Slot 2 Configuration**
- A = No card option
- B = I/O option card (8 digital inputs, 2 solid-state outputs, 3 relay outputs)

**Card Slot 1 Configuration**
- 1 = Standard Communications Module with RS-485

**Example 1:** PXM8251A5BB (PXM 8000 meter, w/ VAUX, std. pwr., com. exp. and I/O cards)

**Example 2:** PXM6251A6BA (PXM 6000 meter, w/ VAUX, std. pwr., com. exp. card)
DILM Contactor (up to 170A)

**Designation**
DILM = Contactor

**Ampere Rating**
- 7A-170A

**Auxiliary Contact**
- 10 = 1NO
- 01 = 1NC
- 21 = 2NO + 1NC
- 22 = 2NO + 2NC
- 32 = 3NO + 2NC

**Operational Voltage**
- AC 50/60Hz
  - 24, 110, 220-230, 380-400V
- AC 50/60Hz
  - 24, 110, 220V
- DC
  - 24, 110, 220
  - RDC24 = 24-27
  - RDC130 = 10-130
  - RDC240 = 200-240V

DILM 7 - 10 (24 VDC)

---

DILM Contactor (up to 170A)

**Designation**
DILM = Contactor

**Ampere Rating**
- 7A-170A

**Auxiliary Contact**
- 10 = 1NO
- 01 = 1NC
- 21 = 2NO + 1NC
- 22 = 2NO + 2NC
- 32 = 3NO + 2NC

**Operational Voltage**
- AC 50/60Hz
  - 24, 110, 220-230, 380-400V
- AC 50/60Hz
  - 24, 110, 220V
- DC
  - 24, 110, 220
  - RDC24 = 24-27
  - RDC130 = 10-130
  - RDC240 = 200-240V

DILM Large Contactor (185~300A)

**Designation**
DILM = Contactor

**Ampere Rating**
- DILM...A Series = 185, 225, 300A

**Auxiliary Contact**
- 1st = 1NO
- 2st = 1NC
- 22 = 2NO + 1NC

**Operational Voltage**
- AC 50/60Hz
  - RAC24 = 24 V
  - RAC48 = 48 V
  - RAC120 = 120 V
  - RAC240 = 240 V
  - RAC400 = 400 V
  - RAC500 = 500 V
- DC
  - RDC24 = 24-27 V
  - RDC60 = 48-60 V
  - RDC130 = 110-130 V
  - RDC240 = 200-240 V

DILM 185A / 22 (RAC24)
**DILM/DILH Large Contactor**

- **Designation**: DILM, DILH = Large contactor
- **Ampere Rating**
  - **DILM Series**: 400 to 820A
  - **DILH Series**: (AC-1)1400 to 2600A
- **Product Family**
  - Blank = Advanced type
  - S = Standard type
- **Operational Voltage**
  - AC 50/60Hz
    - 110-120 V, 220-240 V
  - AC 40-60Hz
    - RAC500 = 250-500 V
  - DC
    - RDC48 = 24-48 V
  - AC/DC
    - RA110 = 48-110 V 40-60 Hz/
    - RA250 = 110-250 V 40-60 Hz/
  - RAW250 = 230-250 AC/DC

**ZB Overload Relay**

- **Designation**: ZB = Overload relay
- **Frame Size**
  - 12: Frame I = 0.1-18A
  - 32: Frame II = 0.1-38A
  - 65: Frame III = 6-75A
  - 150: Frame IV = 25-175A
- **Ampere Rating**
  - 0.1A-175A
ZEB Overload Relay

<table>
<thead>
<tr>
<th>Designation</th>
<th>Frame Size</th>
<th>Ampere Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZEB</td>
<td>12 (Frame I)</td>
<td>0.33-20A</td>
</tr>
<tr>
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<td>32 (Frame II)</td>
<td>0.33-45A</td>
</tr>
<tr>
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<td>65 (Frame III)</td>
<td>9-100A</td>
</tr>
<tr>
<td></td>
<td>150 (Frame IV)</td>
<td>20-170A</td>
</tr>
</tbody>
</table>

PKZ Motor Protective Circuit Breaker

<table>
<thead>
<tr>
<th>Designation</th>
<th>Ampere Rating</th>
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<tbody>
<tr>
<td>PKZM0, PKZMC</td>
<td>0.16 to 32A</td>
</tr>
<tr>
<td>PKZM4</td>
<td>16 to 65A</td>
</tr>
<tr>
<td>PKE</td>
<td>0.3-65A</td>
</tr>
</tbody>
</table>

PKZM - 10

<table>
<thead>
<tr>
<th>Mounting Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>KK = Direct to contactor</td>
</tr>
<tr>
<td>Blank = Separate mount</td>
</tr>
</tbody>
</table>

ZEB Overload Relay

<table>
<thead>
<tr>
<th>Designation</th>
<th>Mounting Mode</th>
<th>Product Family</th>
<th>Frame Size</th>
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</thead>
<tbody>
<tr>
<td>ZEB</td>
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<td>0.33-1.65A</td>
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<td></td>
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<td>GF</td>
<td>1-5A</td>
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<tr>
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<td></td>
<td>Blank</td>
<td>4-20A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9-45A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20-100A</td>
</tr>
</tbody>
</table>
**Circuit Protection & Control Products Quick Selection Guide**

**E Line Series Motor Control & Protection**

---

**XTOG Overload Relay**

**Designation**

XTOG = Thermal Overload Relay

**Ampere Rating**

BC1 = 0.1-12A
CC1 = 12-32A
DC1 = 37-97A
EC1 = 37-97A

---

**XTOG Overload Relay**

**Designation**

XTOG = Thermal Overload Relay

**Ampere Rating**

BC1 = 0.1-12A
CC1 = 12-32A
DC1 = 37-97A
EC1 = 37-97A

---

**XTOG Overload Relay**

**Designation**

XTOG = Thermal Overload Relay

**Ampere Rating**

BC1 = 0.1-12A
CC1 = 12-32A
DC1 = 37-97A
EC1 = 37-97A

---

**XTRG Contactor Relay**

**Designation**

XTRG = E line Contactor Relay

**Auxiliary Contact**

30 = 3NO
21 = 2NO/1NC
12 = 1NO/2NC
03 = 3NC

**Operational Voltage**

B2 = 24V AC50/60Hz
DV = 36V AC50/60Hz
C2 = 48V AC50/60Hz
E2 = 110V AC50/60Hz
AO = 220V AC50/60Hz
AR = 380V AC50/60Hz
B0 = 24V DC

---

**XTRG Contactor Relay**

**Designation**

XTRG = E line Contactor Relay

**Auxiliary Contact**

30 = 3NO
21 = 2NO/1NC
12 = 1NO/2NC
03 = 3NC

**Operational Voltage**

B2 = 24V AC50/60Hz
DV = 36V AC50/60Hz
C2 = 48V AC50/60Hz
E2 = 110V AC50/60Hz
AO = 220V AC50/60Hz
AR = 380V AC50/60Hz
B0 = 24V DC

---

**XTCG Contactor**

**Designation**

XTCG = E line contactor

**Frame Size**

B = 7-12A
C = 18-32A
D = 40-65A
E = 80-95A

**Operational Voltage**

B2 = 24V AC50/60Hz
DV = 36V AC50/60Hz
C2 = 48V AC50/60Hz
E2 = 110V AC50/60Hz
AO = 220V AC50/60Hz
AR = 380V AC50/60Hz
B0 = 24V DC

---

**XTCG Contactor**

**Designation**

XTCG = E line contactor

**Frame Size**

B = 7-12A
C = 18-32A
D = 40-65A
E = 80-95A

**Operational Voltage**

B2 = 24V AC50/60Hz
DV = 36V AC50/60Hz
C2 = 48V AC50/60Hz
E2 = 110V AC50/60Hz
AO = 220V AC50/60Hz
AR = 380V AC50/60Hz
B0 = 24V DC
S801+ Open Soft Starters

S = Soft starter
801+ = Non-combination soft starter

Options
N = Standard

Number of Poles
3 = Three-pole device

Frame Size
N = 65 mm
R = 110 mm
T = 200 mm
U = 200 mm
V = 290 mm

Ampere Rating
N37 = 37A
N66 = 66A
R10 = 105A
R13 = 135A
T18 = 180A
T24 = 240A
T30 = 304A
U36 = 360A
U42 = 420A
U50 = 500A
V36 = 360A
V42 = 420A
V50 = 500A
V55 = 650A
V72 = 720A
V85 = 850A
V10 = 1000A

S811+ Open Soft Starters

S = Soft starter
811+ = Non-combination soft starter

Options
N = No options
P = Premium, 600V rated
V = Premium, 690V rated (S811+T18V35 through S811+V85V35)

Number of Poles
3 = Three-pole device

Frame Size
N = 65 mm
R = 110 mm
T = 200 mm
U = 200 mm
V = 290 mm

Ampere Rating
37 = 37A
66 = 66A
105 = 105A
135 = 135A
180 = 180A
240 = 240A
304 = 304A
360 = 360A
420 = 420A
500 = 500A
650 = 650A
720 = 720A
850 = 850A
1000 = 1000A
## DS7 Soft Start Controllers

### DS7 - 3 4 0 SX 004 N 0 - N

<table>
<thead>
<tr>
<th>Device Series</th>
<th>DS7 - Generation 7</th>
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</thead>
<tbody>
<tr>
<td>Number of Phases</td>
<td>3 - Three-phase mains supply voltage</td>
</tr>
<tr>
<td>Voltage Class</td>
<td>4 - 400V (380V –15% to 480V +10%)</td>
</tr>
<tr>
<td>Control Voltage Supply</td>
<td>0 = 24 Vac/Vdc; 2 = 110/230 Vac; D = 24 Vdc SmartWire-DT</td>
</tr>
<tr>
<td>Device Version</td>
<td>SX = Standard soft starters with internal bypass</td>
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<tr>
<td>Rated Operational Current</td>
<td>004 = 4A; ...; 200 = 200A</td>
</tr>
<tr>
<td>Options</td>
<td>N = No option; D = SmartWire-DT</td>
</tr>
<tr>
<td>Protection Type</td>
<td>0 = IP20</td>
</tr>
<tr>
<td>Radio Interference Suppression Filters</td>
<td>4 = No internal radio interference suppression filters</td>
</tr>
</tbody>
</table>
## DG1 General Purpose Drive

### Basic Naming
- **D** = Drive

### Series
- **G** = General purpose

### Power Part Options
- **3** = 3~ INPUT/3~ OUTPUT
- **4D8**
- **F**
- **B**
- **21C**

### Options
- **N** = No display
- **C** = LCD (graphical)

### Enclosure (IP Rating)
- **21** = IP21
- **54** = IP54

### Internal EMC Filter
- **N** = None
- **F** = Internal EMC filter

### Coating of Boards
- **N** = None
- **C** = Coated

### Output Current Rating (CT)

<table>
<thead>
<tr>
<th>Voltage Range</th>
<th>208–240V</th>
<th>380–500V</th>
<th>525–690V</th>
</tr>
</thead>
<tbody>
<tr>
<td>208–240V</td>
<td>3D7 3.7A, 0.55 kW, 0.75 hp</td>
<td>202 2.2A, 0.75 kW, 1 hp</td>
<td>3D3 3.3A, 1.5 kW, 2 hp</td>
</tr>
<tr>
<td>3D8 4.8A, 0.75 kW, 1 hp</td>
<td>3D3 3.3A, 1.1 kW, 1.5 hp</td>
<td>4D3 4.3A, 1.5 kW, 2 hp</td>
<td>4D5 4.5A, 2.2 kW, 3 hp</td>
</tr>
<tr>
<td>6D6 6.6A, 1.1 kW, 1.5 hp</td>
<td>7D6 7.6A, 3 kW, 5 hp</td>
<td>7D7 7.5A, 3.7 kW, 5 hp</td>
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<tr>
<td>7D8 8.8A, 5.5 kW, 7.5 hp</td>
<td>011 11A, 2.2 kW, 3 hp</td>
<td>016 16A, 7.5 kW, 10 hp</td>
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<tr>
<td>025 25A, 5.5 kW, 7.5 hp</td>
<td>023 23A, 11 kW, 15 hp</td>
<td>018 18A, 11 kW, 15 hp</td>
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<tr>
<td>031 31A, 7.5 kW, 10 hp</td>
<td>031 31A, 15 kW, 20 hp</td>
<td>022 22A, 15 kW, 20 hp</td>
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</tr>
<tr>
<td>048 48A, 11 kW, 15 hp</td>
<td>038 38A, 18 kW, 25 hp</td>
<td>027 27A, 18 kW, 25 hp</td>
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</tr>
<tr>
<td>061 61A, 15 kW, 20 hp</td>
<td>048 48A, 22 kW, 30 hp</td>
<td>034 34A, 22 kW, 30 hp</td>
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</tr>
<tr>
<td>075 75A, 18.5 kW, 25 hp</td>
<td>061 61A, 30 kW, 40 hp</td>
<td>041 41A, 30 kW, 40 hp</td>
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</tr>
<tr>
<td>088 88A, 22 kW, 30 hp</td>
<td>072 72A, 37 kW, 50 hp</td>
<td>052 52A, 37 kW, 50 hp</td>
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</tr>
<tr>
<td>114 114A, 30 kW, 40 hp</td>
<td>087 87A, 45 kW, 60 hp</td>
<td>062 62A, 45 kW, 60 hp</td>
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<tr>
<td>143 143A, 37 kW, 50 hp</td>
<td>105 105A, 55 kW, 75 hp</td>
<td>080 80A, 55 kW, 75 hp</td>
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<tr>
<td>170 170A, 45 kW, 60 hp</td>
<td>140 140A, 75 kW, 100 hp</td>
<td>100 100A, 75 kW, 100 hp</td>
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<tr>
<td>211 211A, 55 kW, 75 hp</td>
<td>170 170A, 90 kW, 125 hp</td>
<td>125 125A, 90 kW, 125 hp</td>
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</tr>
<tr>
<td>261 261A, 75 kW, 100 hp</td>
<td>205 205A, 110 kW, 150 hp</td>
<td>144 144A, 110 kW, 150 hp</td>
<td></td>
</tr>
</tbody>
</table>

### Output Voltage Rating
- 2 = 220V (200–240V ±10%)
- 4 = 400V (380–500V ±10%)
- 5 = 500V (525–690V ±10%)

---

**For more details, please refer to the Circuit Protection & Control Products Quick Selection Guide.**
SVX9000 Adjustable Frequency Drives

SVX 010 A 1 4 A 1 B 1

Product Family
SVX = Open drives

Horsepower Rating (HP)
F07 = 3/4
001 = 1
F15 = 1-1/2
002 = 2
003 = 3
004 = 5
005 = 7-1/2
006 = 7-1/2
007 = 7-1/2
010 = 10
015 = 15
020 = 20
025 = 25
030 = 30
040 = 40
050 = 50
060 = 60
075 = 75
100 = 100
125 = 125
250 = 250
300 = 300
350 = 350
400 = 400
500 = 500
600 = 600
700 = 700
800 = 800
900 = 900
1000 = 1000

Voltage Rating
2 = 230 (208-240) V
4 = 380 (380-500) V
5 = 690 (525-690) V

A = Standard software

Keypad
A = Alphanumeric
G = Liquid crystal panel

SLX Adjustable Frequency Drives

SLX 010 A 1 4 A 1 B 1

Product Family
SLX = Open drives

Horsepower Rating (HP)
001 = 1
F15 = 1-1/2
002 = 2
003 = 3
005 = 5
006 = 6
007 = 7-1/2
010 = 10
015 = 15
020 = 20
025 = 25
030 = 30

 AFL Software Series
A = Standard software

Enclosure
1 = P01
2 = P54

AFL Software Series
A = Standard software

Keypad
A = Alphanumeric
### SPX9000 Adjustable Frequency Drives

#### Product Family
- **SPX** = Open drives

#### Brake Chopper Options
- **N** = No brake chopper circuit
- **B** = Internal brake chopper circuit

#### Input Options
- **1** = Three-phase, EMC H
- **2** = Three-phase, EMC N
- **4** = Three-phase, EMC L

#### Keypad
- **A** = Alphanumeric
- **G** = Liquid crystal panel

#### Voltage Rating
- **2** = 230 (208-240) V
- **3** = 380 (380-500) V
- **4** = 525 (525-690) V

#### Enclosure
- **0** = IP00
- **1** = IP21
- **2** = IP54

#### AFD Software Series
- **A** = Standard software

#### Spares and Service
- **0** = Spares
- **1** = Service

#### Board Modifications
- **1** = Standard boards
- **2** = Conformal (varnished) coating

#### Horsepower Rating (HP)

<table>
<thead>
<tr>
<th>Horsepower Rating (HP)</th>
<th>100</th>
<th>125</th>
<th>250</th>
<th>300</th>
<th>400</th>
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<th>900</th>
<th>1000</th>
<th>1200</th>
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<th>1800</th>
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<td>F15 = 1-1/2</td>
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### SPX9000 Adjustable Frequency Drives

#### Voltage Rating

<table>
<thead>
<tr>
<th>Voltage Rating</th>
<th>230 (208-240) V</th>
<th>380 (380-500) V</th>
<th>525 (525-690) V</th>
</tr>
</thead>
<tbody>
<tr>
<td>007 = 3/4</td>
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</tr>
<tr>
<td>001 = 1</td>
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<tr>
<td>F15 = 1-1/2</td>
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<tr>
<td>002 = 2</td>
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<tr>
<td>003 = 3</td>
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<tr>
<td>004 = 5(I)</td>
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<td>006 = 7-1/2(I)</td>
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<td>015 = 15</td>
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### SPX09000 Adjustable Frequency Drives

#### Spares and Service

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<tr>
<th>Spares</th>
<th>Service</th>
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<tbody>
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<tr>
<td>F15</td>
<td>002</td>
</tr>
<tr>
<td>003</td>
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<tr>
<td>050</td>
<td>060</td>
</tr>
<tr>
<td>075</td>
<td>080</td>
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</table>

#### Board Modifications

<table>
<thead>
<tr>
<th>Board Modifications</th>
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</thead>
<tbody>
<tr>
<td>1 = Standard boards</td>
</tr>
<tr>
<td>2 = Conformal (varnished) coating</td>
</tr>
</tbody>
</table>

#### Keypad

<table>
<thead>
<tr>
<th>Keypad</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = Alphanumeric</td>
</tr>
<tr>
<td>G = Liquid crystal panel</td>
</tr>
</tbody>
</table>

#### Voltage Rating

<table>
<thead>
<tr>
<th>Voltage Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>230 (208-240) V</td>
</tr>
<tr>
<td>380 (380-500) V</td>
</tr>
<tr>
<td>525 (525-690) V</td>
</tr>
</tbody>
</table>

#### Horsepower Rating (HP)

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<tr>
<th>Horsepower Rating (HP)</th>
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<tr>
<td>F07 = 3/4</td>
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<tr>
<td>001 = 1</td>
</tr>
<tr>
<td>F15 = 1-1/2</td>
</tr>
<tr>
<td>002 = 2</td>
</tr>
<tr>
<td>003 = 3</td>
</tr>
<tr>
<td>004 = 5(I)</td>
</tr>
<tr>
<td>005 = 5</td>
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<tr>
<td>006 = 7-1/2(I)</td>
</tr>
<tr>
<td>007 = 7-1/2</td>
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<td>010 = 10</td>
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<td>060 = 60</td>
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<tr>
<td>075 = 75</td>
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</tbody>
</table>
# A22 Pushbuttons and Indicating Lights

## A22 Series Pushbuttons

- 22-mm pushbuttons
- A22 = Front bright ring
- A22M = Front dark ring

## Operator Type

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flush Actuator</td>
<td>RD = Flush actuator</td>
</tr>
<tr>
<td>Illuminated Pushbuttons</td>
<td>LT = Illuminated, flush, momentary</td>
</tr>
<tr>
<td></td>
<td>RLTH = Illuminated extended momentary</td>
</tr>
<tr>
<td></td>
<td>RLTR = Illuminated extended maintained</td>
</tr>
<tr>
<td>Illuminated Double Operator</td>
<td>QDDL = Illuminated double operator</td>
</tr>
<tr>
<td>Mushroom Head Pushbuttons</td>
<td>RP = Mushroom head pushbuttons</td>
</tr>
<tr>
<td></td>
<td>RPSR = Key-release mushroom head operator</td>
</tr>
<tr>
<td>Non-Illuminated Emergency Stops</td>
<td>RPV = Non-illuminated push-pull emergency stop</td>
</tr>
<tr>
<td></td>
<td>E-STOP HEADER = Emergency stop operator (turn to reset)</td>
</tr>
</tbody>
</table>

## Indicating Lights

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>Extended indicator light</td>
</tr>
<tr>
<td>RLF</td>
<td>Flush indicating light</td>
</tr>
<tr>
<td>LC</td>
<td>Compact indicating light</td>
</tr>
</tbody>
</table>

## Selector Switch

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWK1R</td>
<td>2-position, maintained, 60°</td>
</tr>
<tr>
<td>RWK1V</td>
<td>2-position, maintained, 90°</td>
</tr>
<tr>
<td>RWK3R</td>
<td>3-position, maintained, 60°</td>
</tr>
<tr>
<td>RWK3V</td>
<td>3-position, maintained, 90°</td>
</tr>
</tbody>
</table>

## Key-Operated Selector Switches

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS</td>
<td>2-position, maintained, 60°</td>
</tr>
<tr>
<td>RS3</td>
<td>3-position, maintained</td>
</tr>
<tr>
<td>RS3-KMS1-A4</td>
<td>3-position, momentary</td>
</tr>
<tr>
<td>RS3-KMS1-A2</td>
<td>2-position, momentary</td>
</tr>
</tbody>
</table>

## Palm Switches

- FAK-S = 1NO + 1NC
- FAK-R = 2NC

## Lamp Socket Block

- F = Bulb elements without resistor
- FR = Bulb elements with resistor

## Contact Blocks

- K10 = 1NO
- K01 = 1NC
- K11 = 1NO + 1NC
- KC11 A/I = 1NO + 1NC/2 NC Control station

## Button Plate Color

- Non-Illuminated Pushbuttons, Flush, Maintained
  - 01 = Black
  - 02 = White
  - 03 = Green
  - 04 = Red
  - 05 = Yellow
  - 06 = Blue
  - 10, 11, 12, 13, 14, 19, 20, 32, 37, 38 = Actuator with symbol
  - X = No plate

- Illuminated Pushbuttons
  - WS = White
  - GN = Green
  - RT = Red
  - GE = Yellow
  - WS11 = White with symbol

- Mushroom Head Pushbuttons
  - GN11 = Green with symbol
  - RT10 = Red with symbol

- Compact Indicator
  - W = White
  - G = Green
  - R = Red
  - Y = Yellow

---

**Note:**

Contact block Catalog Number Selection
- A22-EK10(C) = 1 Normal open contact
- A22-EK10(C) = 1 Normal closed contact
- A22-EC11 = 1 Normal open contact, 1 Normal closed contact
- A22-EC20 = 2 Normal open contact
- A22-EC02 = 2 Normal closed contact
# M22 Pushbuttons and Indicating Lights

## Designation
- **M** = M series pushbuttons

## Frame Size
- 22 = 22-mm pushbuttons

## Product Family
- **Blank** = Silver
- **S** = Black

### Operator Type
- **Non-Illuminated Pushbuttons, Flush, Maintained**
  - D = Flush momentary
  - DR = Flush maintained

- **Non-Illuminated Pushbuttons, Extended, Maintained**
  - DH = Extended momentary
  - DRH = Extended maintained

- **Mushroom Head Pushbuttons**
  - DP = Non-illuminated momentary mushroom head pushbutton
  - DRP = Non-illuminated maintained mushroom head pushbutton

- **Non-Illuminated Emergency Stops**
  - PV = Non-illuminated push-pull emergency stop
  - PVL = Illuminated push-pull emergency stop
  - PVLT = Illuminated twist-to-release emergency stop
  - PVS = Non-illuminated keyed release (red operator only)

- **Double Pushbuttons**
  - DDL = Extended buttons and light

- **Illuminated Pushbuttons**
  - DL = Illuminated, flush, momentary
  - DRL = Illuminated, flush, maintained
  - DLH = Illuminated extended momentary
  - DR LH = Illuminated extended maintained

- **Illuminated Selector Switches**
  - WLK = Illuminated knob type momentary, two-position
  - WRLLK = Two-position, maintained
  - WLK3 = Illuminated knob type momentary, three-position
  - WLK3L = Three-position, maintained

- **Indicating Lights**
  - L = Flush indicating light
  - LH = Extended indicator light

- **Non-Illuminated Selector Switches**
  - W = Momentary rotary
  - WR = Maintained rotary
  - WK = Momentary knob
  - WRK = Maintained knob
  - WKV = Maintained V-position knob
  - W3 = 3-position, momentary
  - WR3 = 3-position, maintained
  - W3K = 3-position, maintained
  - WR4 = 4-position, maintained
  - WRK4 = 4-position, maintained
  - D4 = Four-way pushbutton, momentary, non-interlocked
  - WJ = Joystick, momentary
  - WJL = Joystick, maintained

- **Key-Operated Selector Switches**
  - WS = Two-position, momentary
  - WRS = Two-position, maintained
  - WS3 = Three-position, momentary
  - WRS3 = Three-position, maintained

## Contact Blocks
- K10 = 1NO
- K01 = 1NC
- K11 = 1NO + 1NC
- K20 = 2NO
- KC11/IY = Emergency-stop button (1NO + 1NC)
- KCD2/1Y = Emergency-stop button (2NC)

## Button Plate Color
- **Flush, Extended, Mushroom Head Pushbuttons**
  - S = Black
  - W = White
  - R = Red
  - G = Green
  - Y = Yellow
  - B = Blue

- **Illuminated Selector Switches**
  - W = White
  - R = Red
  - G = Green
  - Y = Yellow
  - B = Blue
T Cam Switches

Frame Size
- T = 20A
- T3 = 32A
- T5 (B) = 63A
- T5 = 100A

Number of Contact Chambers
- 1 = Contact units

Contact Sequence Number
- T0 = - 1 - 8200 / E +

Mounting Form
- Main Switches
  - EA/SVB = Flush mounting
  - I1 (I2, I4, I5)/SVB = Surface mounting
  - V/SVB = Rear mounting
- Other
  - E = Flush mounting
  - EZ = Center mounting
  - I1 (I2, I4, I5) = Surface mounting
  - IVS = Distribution board - mounting
  - Z = Rear mounting

P Switch-disconnectors

Frame Size
- P1 = 25A, 32A
- P3 = 63A, 100A

Rated Uninterrupted Current
- 25, 32, 63, 100A

Mounting Form
- Main Switches
  - IVS = Distribution board - mounting
  - E = Flush mounting
  - EA/SVB = Flush mounting main switch
  - I…SI = Safety switches
  - EZ = Center mounting
  - Z = Rear mounting
  - I1 (I2, I4, I5) = Surface mounting
  - I1 (I2, I4, I5)/SVB = Surface mounting main switches
LSE-Titan Plastic Electronic Safety Position Switches

**Designation**
- LSE = Plastic electronic safety position switches

**Contacts**
- 02 = 2NC
- 11 = 1NO + 1NC
- A1 = Analog 4-20 mA
- AU = Analog 0-10 V

**Contact Type**
- Blank = Standard contact
- D = Delay contact, early close, delay open
- S = Snap-action contact
- A = Same contact travel

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LS-Titan Metal Safety Switches

**Designation**
- LS = Plastic housing
- LSM = Metal housing

**Contacts**
- 02 = Cage clamp, 2NC
- S02 = Screw terminal, 2NC
- 11 = Cage clamp, 1NO + 1NC
- S11 = Screw terminal, 1NO + 1NC
- 20 = Cage clamp, 2NO
- S20 = Screw terminal, 2NO

**Operating Heads**
- RL = Roller lever
- S = Spring rod actuator
- P = Roller plungers
- RLA = Adjustable roller levers
- RR = Actuating rod
- L (LS, LB) = Roller lever (Long, Short, Large)
**LSR-TKG/TS Hasp/Hinge Operated Safety Switch**

**Designation**
- Limit - Switch - Robust

**Auxiliary Contact**
- S02 = Screw terminal, 2NC
- S11 = Screw terminal, 1NO + 1NC

- 1 = 5° Switching angle, right and left

**LS...ZBZ Solenoid Safety Interlock Switches**

**Designation**
- Limit - Switch

**Auxiliary Contact**
- S02 = Screw terminal
- S11 = Screw terminal

**Rated Control Voltage for Magnet Drive**
- 24D = 24Vdc
- 120A = 120V50/60Hz
- 230A = 230V50/60Hz
Circuit Protection & Control Products Quick Selection Guide

Position Switches

**LS-ZB Safety Position Switches**

**Designation**

Limit – Switch

**Contacts**

- **02**: Cage clamp, 2NC
- **S02**: Screw terminal, 2NC
- **11**: Cage clamp, 1NO + 1NC
- **S11**: Screw terminal, 1NO + 1NC
- **11S**: Cage clamp, 1NO + 1NC, snap-action contact
- **S11S**: Screw terminal, 1NO + 1NC, snap-action contact

**LS - 02 - ZB**

**ZB**: With actuator

**LS4-ZB Safety Position Switches**

**Designation**

Limit – Switch – 4 = Size 4

**Auxiliary Contact**

- **S11-1**: Screw terminal, 1NO + 1NC
- **S11-7**: Screw terminal, 2NO + 1NC

**LS4 / S11-1 / IA / ZB**

**IB**: With actuator

**I**: Enclosure, small and short
**IA**: Enclosure, large and long
**ZB**: With actuator
Circuit Protection & Control Products Quick Selection Guide

**XC PLC**

**Designation**
- **C** = CPU module
- **IOC** = I/O module
- **V** = Text display
- **T** = Accessories

**Model Number**
- **101** = 100 series
- **201** = 200 series
- **121** = All-in-one 100 series

**Function**
- 8 Digital inputs, 6 Digital outputs

**Memory Capacity**
- 64K, 128K, 256K, 512K, 4M

**XC -- CPU101 - C128K - 8DI-6DO**

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**XION Remote I/O Module**

**Designation**
- **GW** = Gateway
- **BR** = Power
- **PF** = Power
- **DI** = I/O Module
- **P/S** = Base
- **KO/QV** = Accessories

**Module Type**
- **PBDP** = Profibus DP Field bus
- **CANOPEN** = Canopen Field bus
- **DNET** = Device net Field bus
- **MODBUS-TCP** = Modbus TCP Gateway
- **24VDC** = 24V DC
- **R** = Relay Output
- **I** = Current
- **U** = Voltage
- **SB** = Wiring Base

**XN-GWBR - PBDP**
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