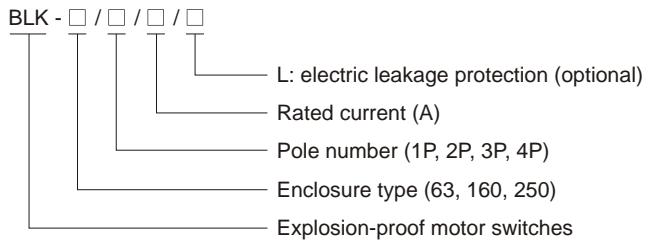


Motor Switches

BLK Series Explosion-proof Motor Switches

- ◆ Explosion protection to
 - CENELEC
 - IEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ Classified as IIB or IIC according to different gas atmospheres.
- ◆ Copper-free aluminium enclosure; powder-coated external surface.
- ◆ Built-in MCB (mini circuit breaker), MCCB (moulded case circuit breaker).
- ◆ Electric leakage protection device is optional.

■ Catalogue number logic



■ Note

1. Please select the model by catalogue number logic above, and specify all technical data.
2. Please specify explosion-proof mark when ordering.
3. Entry size and direction on request.



Zones 1&2; 21&22

Technical data

Explosion-proof motor switches **BLK-63/□/□/□**

Explosion protection

Gas explosion protection

⊕ II 2 G Ex d IIB T6

Dust explosion protection

Ex tD A21 T80°C IP65

Certificates

For gas explosion protection

LCIE 06 ATEX 6091; IECEx LCI 08. 0009

For dust explosion protection

PCEC (China)

Conformity to standards

EN 60079-0:2004, EN 60079-1:2004

IEC 60079-0:2004, IEC 60079-1:2003, IEC 61241-0:2004, IEC 61241-1:2004

Enclosure material

Copper-free aluminium; powder coated external surface

Enclosure colour

Window grey (RAL7040)

Exposed fastener

Stainless steel

Circuit breaker

MCB (mini circuit breaker)

Max. working voltage

440V AC 50/60Hz

Rated voltage

1P/230V AC, 2P/3P/4P/400V AC 50/60Hz

Rated current

1A, 2A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A

Pole number

1P, 2P, 3P, 4P

Breaking capacity

6kA, 10kA, 15kA

Tripping characteristic

Instantaneous tripping range (5~10) In, (7~10) In or (10~14) In

Impulse withstand voltage

6kV

Degree of protection

IP65

Ambient temperature

-20°C ~ +55°C

Cable entries

Standard 1~16A: 2 x M25 x 1.5 plug

20~32A: 2 x M32 x 1.5 plug

40~63A: 2 x M40 x 1.5 plug

Cable gland (optional)

DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25.

Entry direction

Bottom

Enclosure weight

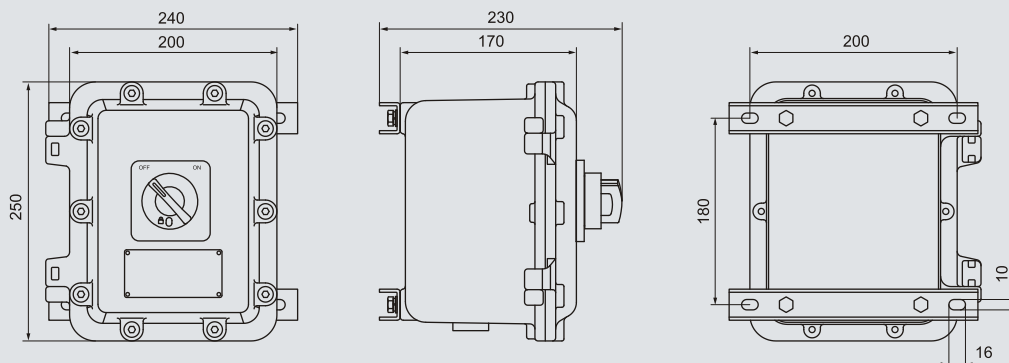
8.00 kg

Electric leakage protection

On request



Dimensions (all dimensions in mm) - subject to alteration



BLK-63/□/□/□

Technical data

Explosion-proof motor switches BLK-160/□/□/□

Explosion protection

Gas explosion protection

Ex II 2 G Ex d IIB T6

Dust explosion protection

Ex tD A21 T80°C IP65

Certificates

For gas explosion protection

LCIE 06 ATEX 6091; IECEX LCI 08. 0009

For dust explosion protection

PCEC (China)

Conformity to standards

EN 60079-0:2004, EN 60079-1:2004

IEC 60079-0:2004, IEC 60079-1:2003, IEC 61241-0:2004, IEC 61241-1:2004

Enclosure material

Copper-free aluminium; powder coated external surface

Enclosure colour

Window grey (RAL7040)

Exposed fastener

Stainless steel

Circuit breaker

MCCB (moulded case circuit breaker)

Rated working voltage

690V AC 50/60Hz

500V DC

Rated working current

80A, 100A, 125A, 160A

Pole number

3P, 4P

Breaking capacity

380/415V AC 50/60Hz, 36kA/50kA

440V AC 50/60Hz, 30kA/45kA

Impulse withstand voltage

8kV

Tripping device

Thermomagnetic type

Degree of protection

IP65

Ambient temperature

-20°C ~ +55°C

Cable entries

Standard 80~100A, 2 x M50 x 1.5 plug

125~160A, 2 x M63 x 1.5 plug

Cable gland (optional)

DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25.

Entry direction

Bottom

Enclosure weight

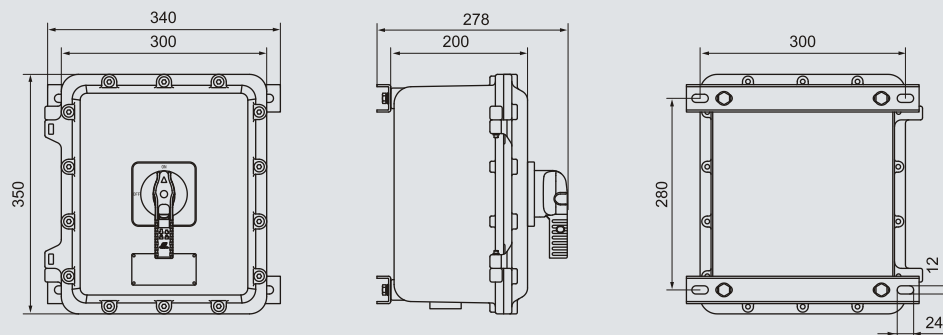
18.90kg

Electric leakage protection

On request



Dimensions (all dimensions in mm) - subject to alteration



BLK-160/□/□/□

Technical data

Explosion-proof motor switches BLK-250/□/□/□

Explosion protection

Gas explosion protection

⊕ II 2 G Ex d IIB T6

Dust explosion protection

Ex tD A21 T80°C IP65

Certificates

For gas explosion protection

LCIE 06 ATEX 6091; IECEx LCI 08. 0009

For dust explosion protection

PCEC (China)

Conformity to standards

EN 60079-0:2004, EN 60079-1:2004

IEC 60079-0:2004, IEC 60079-1:2003, IEC 61241-0:2004, IEC 61241-1:2004

Enclosure material

Copper-free aluminium; powder coated external surface

Enclosure colour

Window grey (RAL7040)

Exposed fastener

Stainless steel

Circuit breaker

MCCB (moulded case circuit breaker)

Rated working voltage

690V AC 50/60Hz

500V DC

Rated working current

200A, 250A

Pole number

3P, 4P

Breaking capacity

380/415V AC 50/60Hz, 36kA/50kA

440V AC 50/60Hz, 25kA/40kA

Impulse withstand voltage

8kV

Tripping device

Thermomagnetic type

Degree of protection

IP65

Ambient temperature

-20°C ~ +55°C

Cable entries

Standard 2 x M63 x 1.5 plug

Cable gland (optional)

DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25.

Entry direction

Bottom

Enclosure weight

28.50kg

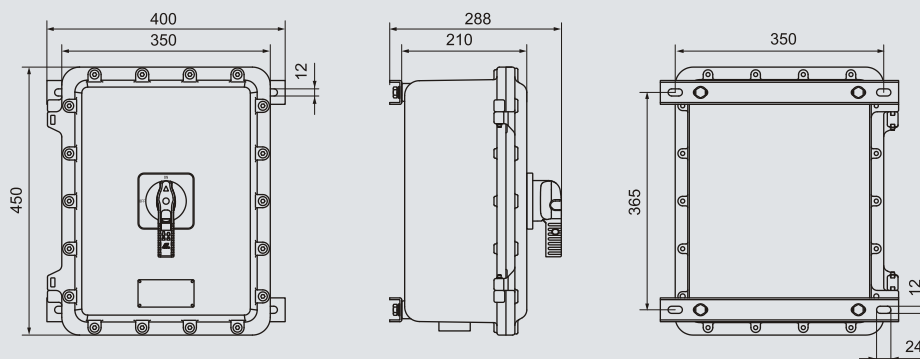
Electric leakage protection

On request

Note

Rated current > 250A on request.

Dimensions (all dimensions in mm) - subject to alteration



BLK-250/□/□/□



Technical data

Explosion-proof motor switches BLK-63/□/□/□

Explosion protection

Gas explosion protection

⊕ II 2 G Ex d IIC T6 Gb

Dust explosion protection

⊕ II 2 D Ex t IIIC T80°C Db IP66

Certificates

DNV 12 ATEX____; IECEX; PCEC (China)

Conformity to standards

EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009
IEC 60079-0:2007, IEC 60079-1:2007, IEC 60079-31:2008

Enclosure material

Copper-free aluminium; powder coated external surface

Enclosure colour

Window grey (RAL7040)

Exposed fastener

Stainless steel

Circuit breaker

MCB (mini circuit breaker)

Max. working voltage

440V AC 50/60Hz

Rated voltage

1P/230V AC, 2P/3P/4P/400V AC 50/60Hz

Rated current

1A, 2A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A

Pole number

1P, 2P, 3P, 4P

Breaking capacity

6kA, 10kA, 15kA

Impulse withstand voltage

6kV

Tripping characteristic

Instantaneous tripping range (5~10) In, (7~10) In or (10~14) In

Degree of protection

IP66

Ambient temperature

-60°C ~ +55°C

Cable entries

Standard 1~16A: 2 x M25 x 1.5 plug
20~32A: 2 x M32 x 1.5 plug
40~63A: 2 x M40 x 1.5 plug

Cable gland (optional)

DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25.

Entry direction

Bottom

Enclosure weight

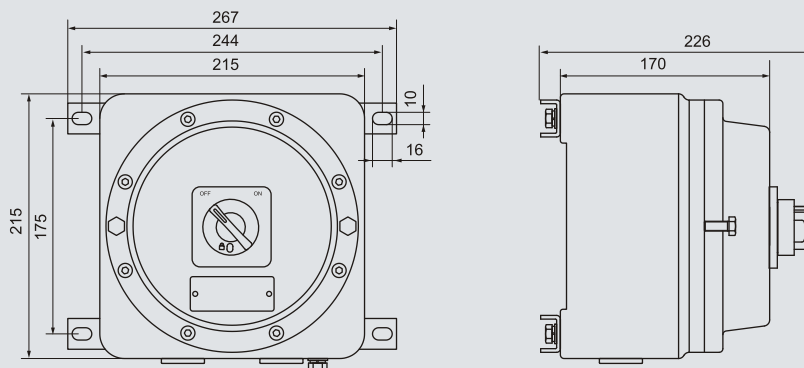
6.50kg

Electric leakage protection

On request



Dimensions (all dimensions in mm) - subject to alteration



BLK-63/□/□/□

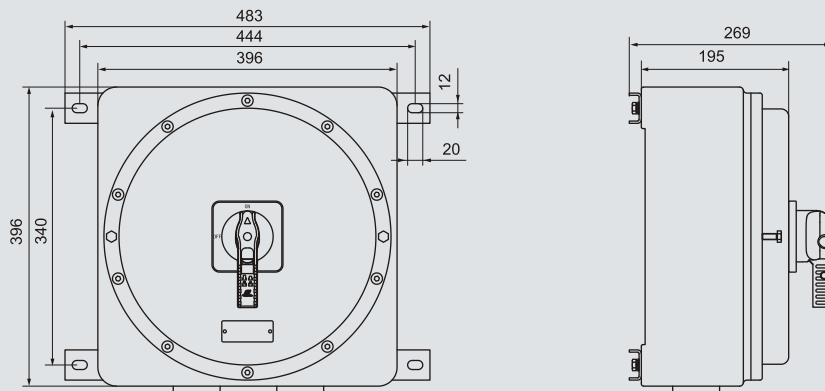
Technical data

Explosion-proof motor switches **BLK-160/□/□/□**

| | |
|------------------------------------|--|
| Explosion protection | <p>Gas explosion protection Ex II 2 G Ex d IIC T6 Gb</p> <p>Dust explosion protection Ex II 2 D Ex t IIIIC T80°C Db IP66</p> |
| Certificates | DNV 12 ATEX____; IECEx; PCEC (China) |
| Conformity to standards | EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009 IEC 60079-0:2007, IEC 60079-1:2007, IEC 60079-31:2008 |
| Enclosure material | Copper-free aluminium; powder coated external surface |
| Enclosure colour | Window grey (RAL7040) |
| Exposed fastener | Stainless steel |
| Circuit breaker | MCCB (moulded case circuit breaker) |
| Rated working voltage | 690V AC 50/60Hz 500V DC |
| Rated working current | 80A, 100A, 125A, 160A |
| Pole number | 3P, 4P |
| Breaking capacity | 380/415V AC 50/60Hz, 36kA/50kA 440V AC 50/60Hz, 30kA/45kA |
| Impulse withstand voltage | 8kV |
| Tripping device | Thermomagnetic type |
| Degree of protection | IP66 |
| Ambient temperature | -60°C ~ +55°C |
| Cable entries | Standard 80~100A, 2 x M50 x 1.5 plug 125~160A, 2 x M63 x 1.5 plug |
| Cable gland (optional) | DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25. |
| Entry direction | Bottom |
| Enclosure weight | 21.00kg |
| Electric leakage protection | On request |



Dimensions (all dimensions in mm) - subject to alteration



BLK-160/□/□/□

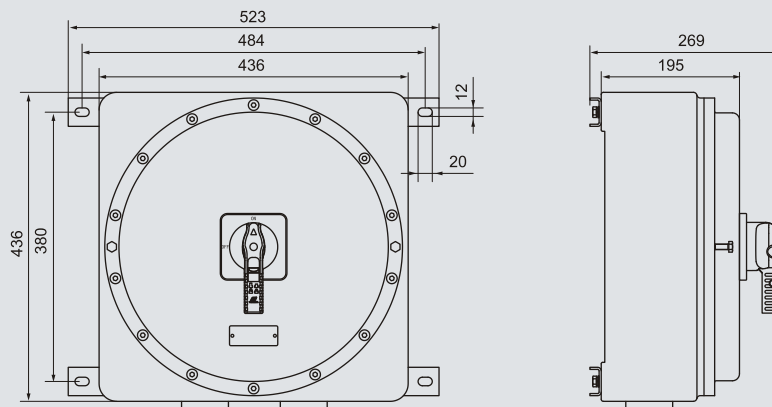
Technical data

Explosion-proof motor switches BLK-250/□/□/□

| | |
|------------------------------------|---|
| Explosion protection | |
| Gas explosion protection | ⊕ II 2 G Ex d IIC T6 Gb |
| Dust explosion protection | ⊕ II 2 D Ex t IIIC T80°C Db IP66 |
| Certificates | DNV 12 ATEX____; IECEX; PCEC (China) |
| Conformity to standards | EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009 IEC 60079-0:2007, IEC 60079-1:2007, IEC 60079-31:2008 |
| Enclosure material | Copper-free aluminium; powder coated external surface |
| Enclosure colour | Window grey (RAL7040) |
| Exposed fastener | Stainless steel |
| Circuit breaker | MCCB (moulded case circuit breaker) |
| Rated working voltage | 690V AC 50/60Hz 500V DC |
| Rated working current | 200A, 250A |
| Pole number | 3P, 4P |
| Breaking capacity | 380/415V AC 50/60Hz, 36kA/50kA 440V AC 50/60Hz, 25kA/40kA |
| Impulse withstand voltage | 8kV |
| Tripping device | Thermomagnetic type |
| Degree of protection | IP66 |
| Ambient temperature | -60°C ~ +55°C |
| Cable entries | Standard 2 x M63 x 1.5 plug |
| Cable gland (optional) | DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25. |
| Entry direction | Bottom |
| Enclosure weight | 24.00kg |
| Electric leakage protection | On request |
| Note | Rated current > 250A on request. |

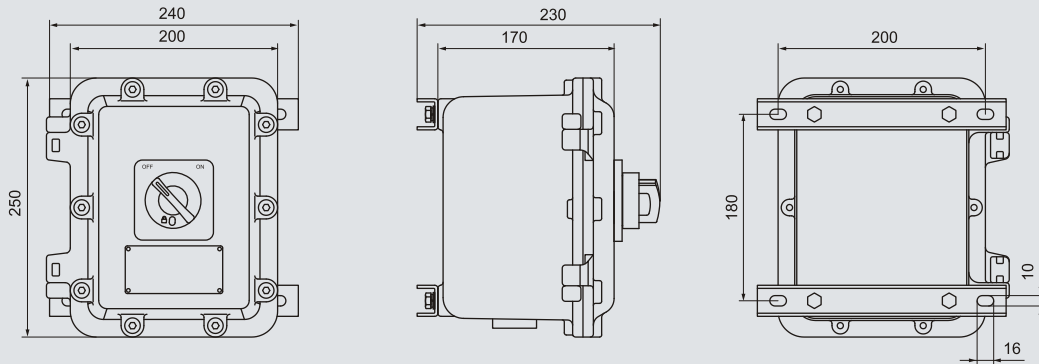


Dimensions (all dimensions in mm) - subject to alteration

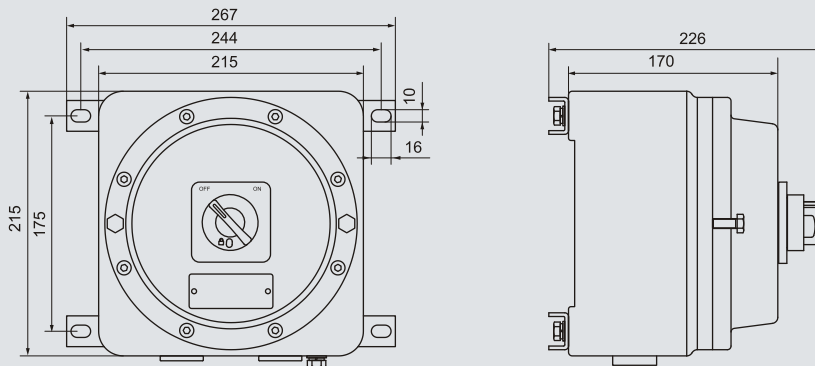


BLK-250/□/□/□

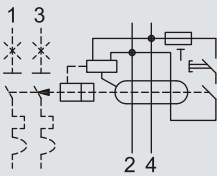
Outline dimensions of some products with electric leakage protection (all dimensions in mm-subject to alteration)



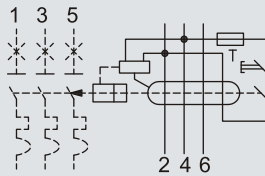
BLK-63/2P/L (Ex d IIB)



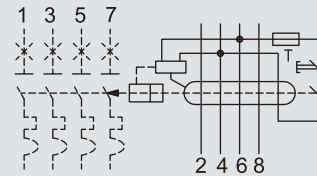
BLK-63/2P/L (Ex d IIC)



2P/L Electrical schematic diagram

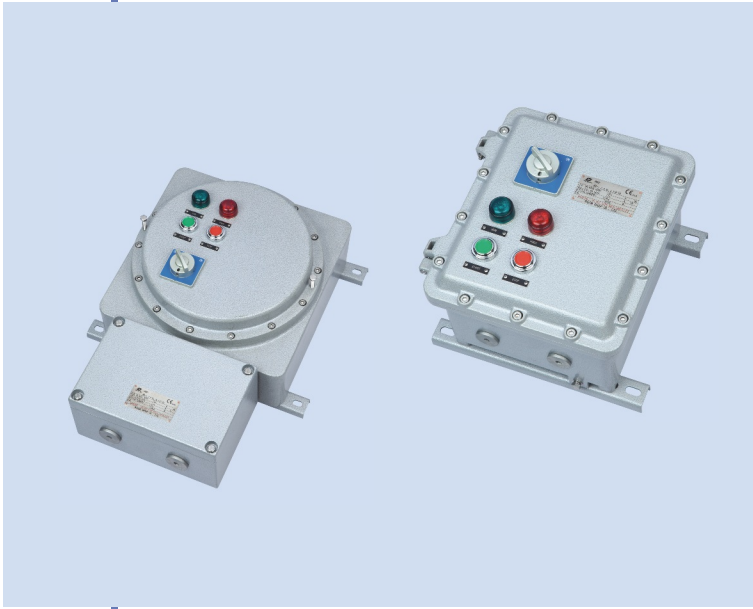


3P/L Electrical schematic diagram



4P/L Electrical schematic diagram



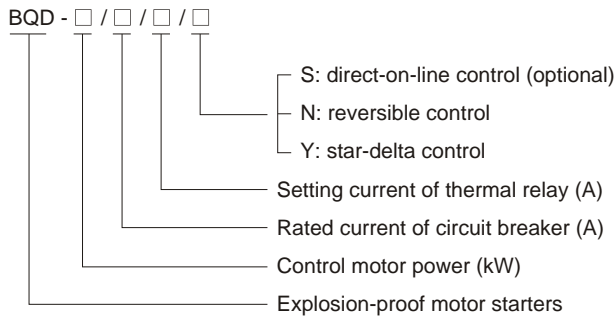


Standard Motor Starters

BQD Series Explosion-proof Motor Starters

- ◆ Explosion protection to
 - CENELEC
 - IEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ Classified as IIB or IIC according to different gas atmospheres.
- ◆ Different motor starters.
- ◆ Copper-free aluminium enclosure; powder external surface.

■ Catalogue number logic



■ Note

1. Please select the model by catalogue number logic above, and specify all technical data.
2. Please specify explosion-proof mark when ordering.
3. Entry size, entry direction, enclosure material, etc. on request.



Zones 1&2; 21&22

Technical data

Explosion-proof motor starters (direct-on-line control)

BQD-□/□/□

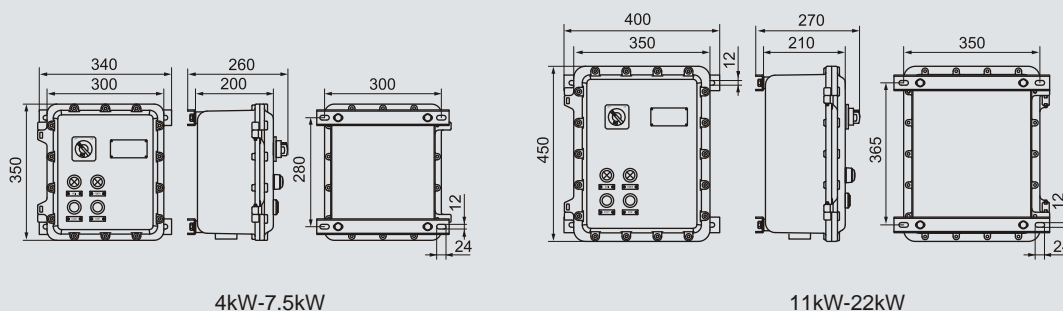
| | | |
|--------------------------------|---|--|
| Explosion protection | Gas explosion protection Dust explosion protection | Ex II 2 G Ex d IIB T6 Ex tD A21 T80°C IP65 |
| Certificates | For gas explosion protection For dust explosion protection | LCIE 06 ATEX 6090; IECEx LCI 08.0010 PCEC (China) |
| Conformity to standards | | EN 60079-0:2004, EN 60079-1:2004 IEC 60079-0:2004, IEC 60079-1:2003, IEC 61241-0:2004, IEC 61241-1:2004 |
| Enclosure material | | Copper-free aluminium; powder coated external surface |
| Enclosure colour | | Window grey (RAL7040) |
| Exposed fastener | | Stainless steel |
| Components | | MCB (mini circuit breaker) AC contactor Thermal overload relay Indicator, pushbutton |
| Rated voltage | | 380/400V AC 50/60Hz |
| Degree of protection | | IP65 |
| Ambient temperature | | -20°C ~ +55°C |
| Cable entries | | Standard M□ x 1.5 plug; See Selection Table as below |
| Cable gland (optional) | | DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25. |
| Entry direction | | Bottom |

Selection table

| Type | Control motor power (kW) | Rated current of circuit breaker (A) | Adjustable range of setting current of thermal relay (A) | Rated current of contactor (A) | Cable entry size | Enclosure weight (kg) |
|-------------------|--------------------------|--------------------------------------|--|--------------------------------|------------------|-----------------------|
| BQD-4/16/7~10 | 4 | 16 | 7~10, Ie=8.5 | 9 | 2 x M25 x 1.5 | 20.00 |
| BQD-5.5/20/9~13 | 5.5 | 20 | 9~13, Ie=11 | 12 | 2 x M25 x 1.5 | 20.00 |
| BQD-7.5/25/12~18 | 7.5 | 25 | 12~18, Ie=16 | 18 | 2 x M32 x 1.5 | 20.00 |
| BQD-11/32/16~24 | 11 | 32 | 16~24, Ie=23 | 25 | 2 x M32 x 1.5 | 30.00 |
| BQD-15/40/23~32 | 15 | 40 | 23~32, Ie=30 | 32 | 2 x M32 x 1.5 | 30.00 |
| BQD-18.5/50/30~38 | 18.5 | 50 | 30~38, Ie=36 | 40 | 2 x M40 x 1.5 | 30.00 |
| BQD-22/63/37~50 | 22 | 63 | 37~50, Ie=46 | 50 | 2 x M40 x 1.5 | 30.00 |



Dimensions (all dimensions in mm) - subject to alteration



Technical data

Explosion-proof motor starters (star-delta control)

BQD-□/□/□/ Y

Explosion protection

Gas explosion protection
Dust explosion protection

⊕ II 2 G Ex d IIB T6
Ex tD A21 T80°C IP65

Certificates

For gas explosion protection
For dust explosion protection

LCIE 06 ATEX 6090; IECEx LCI 08.0010
PCEC (China)

Conformity to standards

EN 60079-0:2004, EN 60079-1:2004
IEC 60079-0:2004, IEC 60079-1:2003, IEC 61241-0:2004, IEC 61241-1:2004

Enclosure material

Copper-free aluminium; powder coated external surface

Enclosure colour

Window grey (RAL7040)

Exposed fastener

Stainless steel

Components

MCB (mini circuit breaker) or MCCB (moulded case circuit breaker)
AC contactor
Thermal overload relay

Rated voltage

380/400V AC 50/60Hz

Degree of protection

IP65

Ambient temperature

-20°C ~ +55°C

Cable entries

Standard M□ x 1.5 plug; See Selection Table as below

Cable gland (optional)

DQM-II (Ex d) or DQM-III (Ex d) is recommended. Please see P7/20~25.

Entry direction

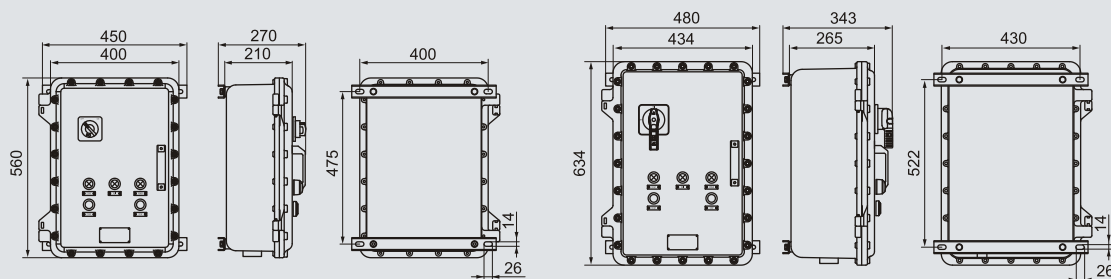
Bottom

Selection table

| Type | Control motor power (kW) | Rated current of circuit breaker (A) | Adjustable range of setting current of thermal relay (A) | Setting value of delay time | Cable entry size | Enclosure weight (kg) |
|---------------------|--------------------------|--------------------------------------|--|-----------------------------|------------------|-----------------------|
| BQD-18.5/50/30-40/Y | 18.5 | 50 | 30~40, Ie=36 | 13s | 3 x M40 x 1.5 | 40.00 |
| BQD-22/63/37-50/Y | 22 | 63 | 37~50, Ie=46 | 15s | 3 x M40 x 1.5 | 40.00 |
| BQD-30/80/48-65/Y | 30 | 80 | 48~65, Ie=60 | 17s | 3 x M50 x 1.5 | 54.50 |
| BQD-37/100/63-80/Y | 37 | 100 | 63~80, Ie=75 | 18s | 3 x M50 x 1.5 | 54.50 |
| BQD-45/125/80-104Y | 45 | 125 | 80~104, Ie=90 | 20s | 3 x M63 x 1.5 | 54.50 |



Dimensions (all dimensions in mm) - subject to alteration



18.5kW-22kW

30kW-45kW

Technical data

Explosion-proof motor starters (direct-on-line control)

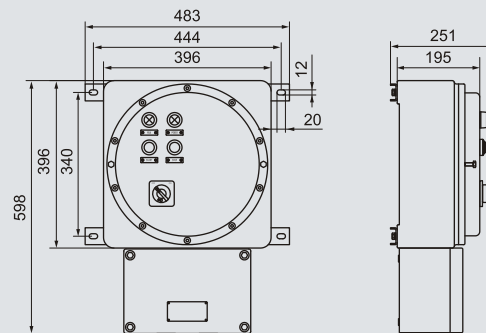
BQD-□/□/□

| | | |
|-------------------------|---|-----------------|
| Explosion protection | ⊕ II 2 G Ex de IIC T6 | Ex de IIC T6 Gb |
| Certificates | LCIE 10 ATEX 3075; IECEx CQM 11.0017X | |
| Conformity to standards | EN 60079-0:2006, EN 60079-1:2004, EN 60079-7:2007 IEC 60079-0:2007, IEC 60079-1:2007, IEC 60079-7:2006 | |
| Enclosure material | Copper-free aluminium; powder coated external surface | |
| Enclosure colour | Window grey (RAL7040) | |
| Exposed fastener | Stainless steel | |
| Components | MCB (mini circuit breaker) AC contactor Thermal overload relay Indicator, pushbutton | |
| Rated voltage | 380/400V AC 50/60Hz | |
| Degree of protection | IP65 | |
| Ambient temperature | -20°C ~ +55°C | |
| Cable entries | Standard M□ x 1.5 plug; See Selection Table as below | |
| Cable gland (optional) | DQM-I (Ex e) is recommended. Please see P7/17~19. | |
| Entry direction | Bottom | |

Selection table

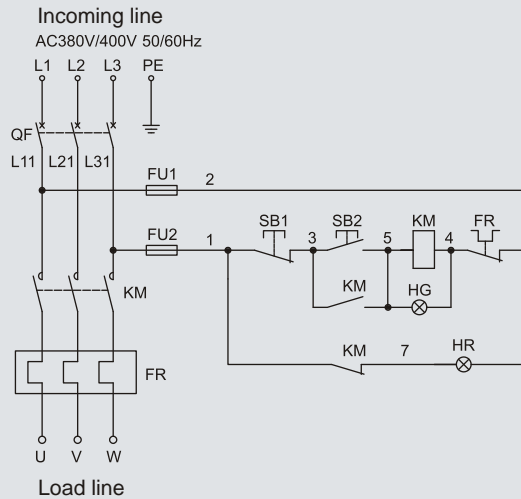
| Type | Control motor power (kW) | Rated current of circuit breaker (A) | Adjustable range of setting current of thermal relay (A) | Rated current of contactor (A) | Cable entry size | Enclosure weight (kg) |
|-------------------|--------------------------|--------------------------------------|--|--------------------------------|------------------|-----------------------|
| BQD-4/16/7~10 | 4 | 16 | 7~10, Ie=8.5 | 9 | 2 x M25 x 1.5 | 28.00 |
| BQD-5.5/20/9~13 | 5.5 | 20 | 9~13, Ie=11 | 12 | 2 x M25 x 1.5 | 28.00 |
| BQD-7.5/25/12~18 | 7.5 | 25 | 12~18, Ie=16 | 18 | 2 x M32 x 1.5 | 28.00 |
| BQD-11/32/16~24 | 11 | 32 | 16~24, Ie=23 | 25 | 2 x M32 x 1.5 | 28.00 |
| BQD-15/40/23~32 | 15 | 40 | 23~32, Ie=30 | 32 | 2 x M32 x 1.5 | 28.00 |
| BQD-18.5/50/30~38 | 18.5 | 50 | 30~38, Ie=36 | 40 | 2 x M40 x 1.5 | 28.00 |
| BQD-22/63/37~50 | 22 | 63 | 37~50, Ie=46 | 50 | 2 x M40 x 1.5 | 28.00 |

Dimensions (all dimensions in mm) - subject to alteration



4kW-22kW

Electrical schematic diagram



Code of electric components

QF: circuit breaker

KM: AC contactor

FR: thermal relay

FU1, FU2: fuse

SB1: stop button

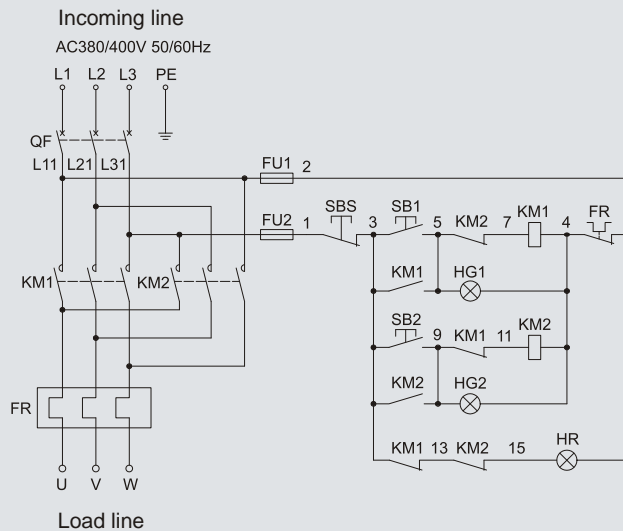
SB2: start button

HR: power indicator

HG: running indicator

Electrical schematic diagram

Direct-on-line motor starter



Code of electric components

QF: circuit breaker

KM1, KM2: AC contactor

FR: thermal relay

FU1, FU2: fuse

SBS: stop button

SB1: non-reversible start button

SB2: reversible start button

HR: power indicator

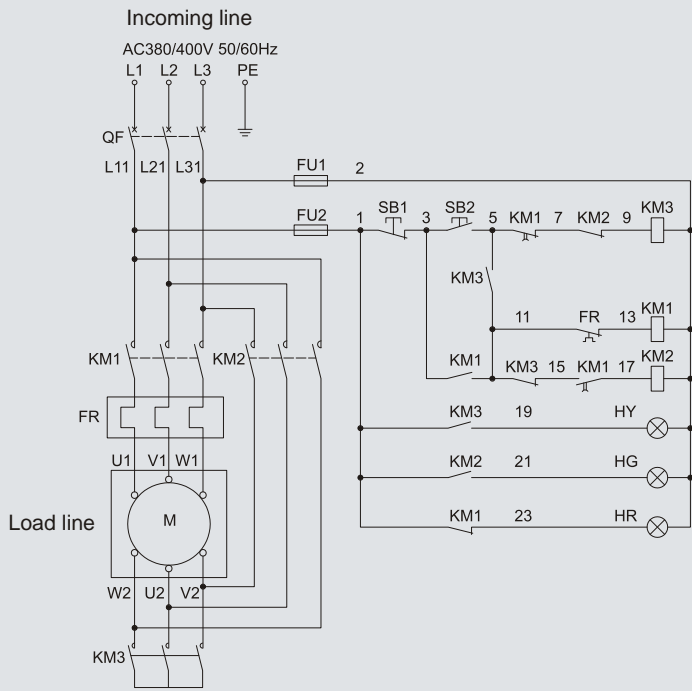
HG1: non-reversible running indicator

HG2: reversible running indicator

Electrical schematic diagram

Reversibly controlled motor starter

Electrical schematic diagram



Code of electric components

- QF: circuit breaker
- KM1: main contactor
- KM3: star start contactor
- KM2: triangle running contactor
- FR: thermal relay
- FU1, FU2: fuse
- SB1: stop button
- SB2: start button
- HR: power indicator
- HY: star start indicator
- HG: triangle running indicator

Electrical schematic diagram
Star-delta controlled motor starter

