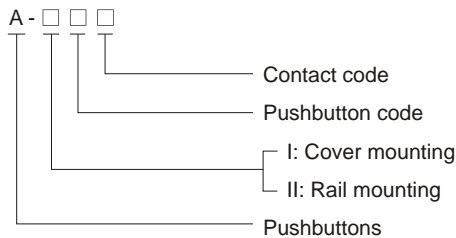


Components for BZC Control Stations HA Series Pushbuttons

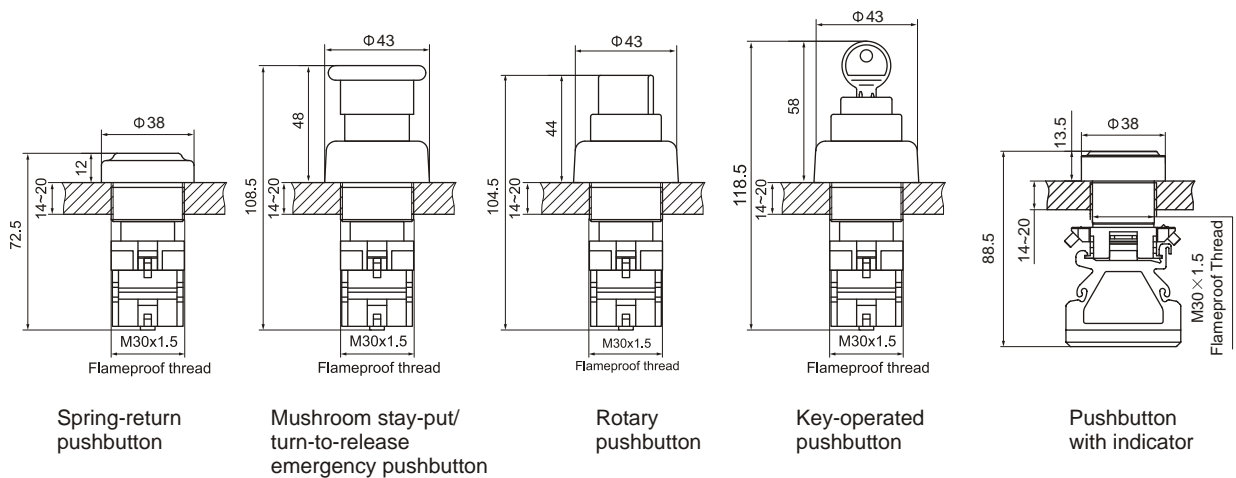
- ◆ Explosion protection to
 - CENELEC
 - IEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ Five different ways of operation
 - Spring-return pushbutton
 - Key-operated pushbutton
 - Mushroom stay-put emergency pushbutton
 - Mushroom turn-to-release emergency pushbutton
 - Rotary pushbutton

■ Catalogue number logic

HA (A for short)



■ Dimension drawings (all dimensions in mm) - subject to alteration



Spring-return pushbutton

Mushroom stay-put/
turn-to-release
emergency pushbutton


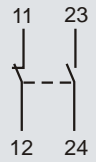


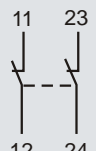
Rotary pushbutton

Key-operated pushbutton




Pushbutton with indicator

Zones 1&2; 21&22

Selection table of pushbutton contact

Version	Specification	Contact code	Ordering code	Weight (kg)
 I: Cover mounting	 1 NO+1NC	R	40033-1	0.05
			40033-2	0.10
 II: Rail mounting	 2 NO	S	40034-1	0.05
			40034-2	0.10
	 2 NC	T	40035-1	0.05
			40035-2	0.10

Selection table

Cover mounting	Rail mounting	Specification	Code	Ordering code	Weight (kg)	
		Spring-return pushbutton ● Red ● Green ● Yellow	a	40036A-1 / 40036A-2	0.15	
			b	40036B-1 / 40036B-2	0.15	
			c	40036C-1 / 40036C-2	0.15	
		Mushroom stay-put emergency pushbutton	Red	d	40037-1 / 40037-2	0.27
		Mushroom turn-to-release emergency pushbutton	Red	e	40040-1 / 40040-2	0.27
		Rotary pushbutton	Black	f	40039-1 / 40039-2	0.27
		Key-operated pushbutton	Black	g	40038-1 / 40038-2	0.27
		Pushbutton with indicator ● Red ● Green ● Yellow	a	40057A-1 / 40057A-2	0.15	
			b	40057B-1 / 40057B-2	0.15	
			c	40057C-1 / 40057C-2	0.15	

The last number of ordering code: 1 - cover mounting; 2 - rail mounting



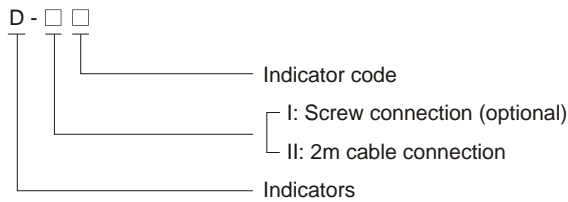


Components for BZC Control Stations HD Series Indicators

- ◆ Explosion protection to
 - CENELEC
 - IEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ Available in
 - red
 - green
 - yellow
 - white
- ◆ Two types
 - screw connection
 - 2m cable connection






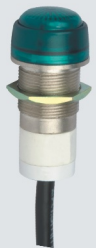




■ Catalogue number logic

HD(D for short)



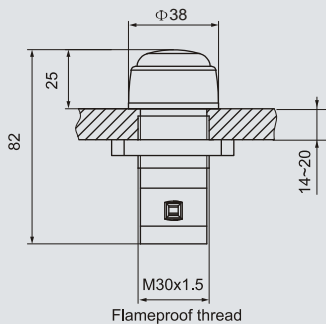
Zones 1&2; 21&22

Selection table

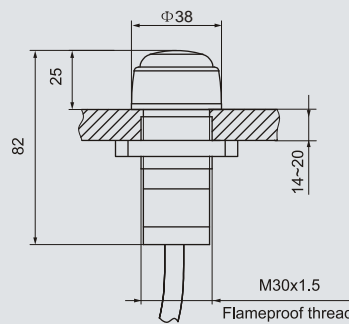
Type	Rated voltage	Schematic diagram	Colour	Code	Ordering code	Weight (kg)
I: Screw connection 	220~415V AC		Red	Ra	40041A	0.10
			Green	Ga	40042A	
			Yellow	Ya	40043A	
			White	Wa	40044A	
	220V DC		Red	Rb	40045A	0.10
			Green	Gb	40046A	
			Yellow	Yb	40047A	
			White	Wb	40048A	
	48~120V AC/DC		Red	Rc	40049A	0.10
			Green	Gc	40050A	
			Yellow	Yc	40051A	
			White	Wc	40052A	
	12~36V AC/DC		Red	Rd	40053A	0.10
			Green	Gd	40054A	
			Yellow	Yd	40055A	
			White	Wd	40056A	
II: 2m cable connection 	220~415V AC		Red	Ra	40041B	0.30
			Green	Ga	40042B	
			Yellow	Ya	40043B	
			White	Wa	40044B	
	220V DC		Red	Rb	40045B	0.30
			Green	Gb	40046B	
			Yellow	Yb	40047B	
			White	Wb	40048B	
	48~120V AC/DC		Red	Rc	40049B	0.30
			Green	Gc	40050B	
			Yellow	Yc	40051B	
			White	Wc	40052B	
	12~36V AC/DC		Red	Rd	40053B	0.30
			Green	Gd	40054B	
			Yellow	Yd	40055B	
			White	Wd	40056B	



Dimension drawings (all dimensions in mm) - subject to alteration



I: Screw connection



II: 2m cable connection (cable specification: 2×1.5mm²)

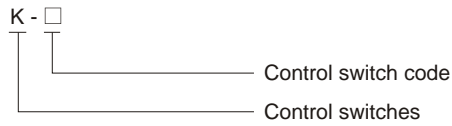


Components for BZC Control Stations HK Series Control Switches

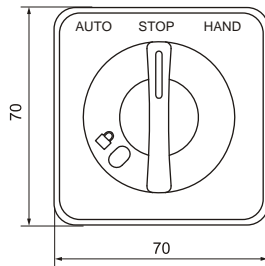
- ◆ Explosion protection to
 - CENELEC
 - IEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ Available in latching and spring-return forms.
- ◆ Different function options.
- ◆ Max. 6 poles.
- ◆ The switch shall be fitted inside Ex d enclosure.

■ Catalogue number logic

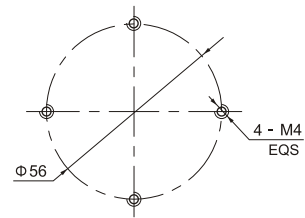
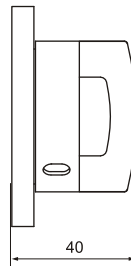
HK(K for short)



■ Dimension drawings (all dimensions in mm) - subject to alteration



Operating handle



Mounting hole

Zones 1&2; 21&22

Selection table

Switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
a				a.Functional wiring is the same as double buttons with auto-reset function.
b				b.Functional wiring is the same as double buttons; auto-reset after start; lock-stop gear added to avoid mistake operation.
c				c.Button with 2 NO contacts and available at auto-reset function. Suitable for high-voltage engine control circuit or function panel uses switch code "a".
d				d.Low-power switch.
e				e.Function is same as three buttons; able to control engine in forward and backward rotation. FW&BW starting positions can auto-reset.
f				f.Selection switch with stop gear in midst.
g				g.Be equal to mounting two buttons and one changeover switch in one axis. Possible to output contact signal or monitoring signal between start and stop.
h				h.Multi-signals transmit gradually.
i				i.Add function of transmitting resultant signal on the base of function panel uses switch code "h".



Selection table

Switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
j				j. Two positions step; change-over gradually.
k				k. Changeover switch.
l				l. Selection switch with three poles and two launches.
m				m. Three-position changeover switch among auto, manual and start; auto-reset after start; it can convert to auto gear only after passing stop gear.
n				n. Structure is a little different to universal structure of switch code "m"; it directly rotates to auto gear without passing stop gear after starts.
o				o. Double contacts auto reset for start, with lock-stop gear.
p				p. Double contacts for stop, to substitute switch code "a" and "c" for start and stop; auto-reset.
q				q. Stop with double contacts, with lock stop gear; auto-reset after start.
r				r. Double contacts for both start and stop; it is same as universal panel of switch code "a", with auto-reset for start and stop.

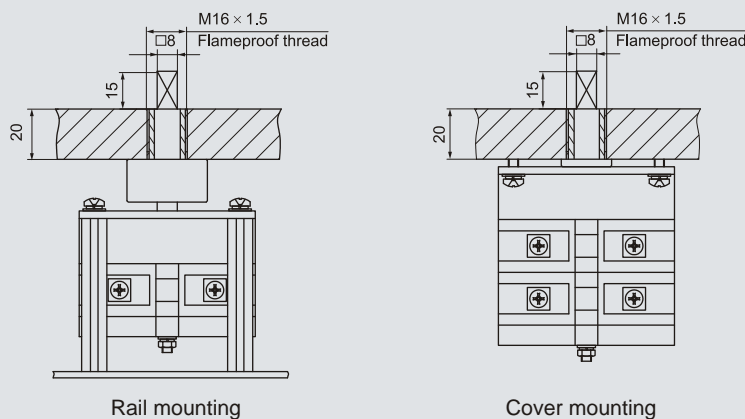


Selection table

Switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
S				s. Transmit a contact signal before start and stop.
t				t. With lock-stop gear for start and stop to prevent mistake operation; without auto-reset.
u				u. Double-control selection switch.
v				v. Changeover switch for voltage phase-changing and measuring.
w				w. One 2NO auto-reset pushbutton, both left and right are the same.
x				x. Two 2NO auto-reset buttons.



Dimension drawings (all dimensions in mm) - subject to alteration



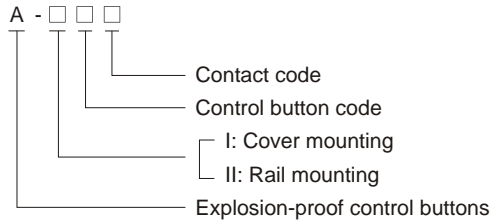


Components for Control Stations BA8050 Series Explosion-proof Control Buttons


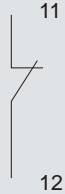


- ◆ Explosion protection to
 - CENELEC
 - IEC
 - NEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ 2 versions of components
 - 1 NO
 - 1 NC
- ◆ Six different ways of operation
 - Spring-return control button
 - Mushroom stay-put emergency control button
 - Key-operated control button
 - Rotary control button
 - Double control button
 - Mushroom turn-to-release emergency control button

■ Catalogue number logic

BA8050(A for short)



Zones 1&2; 21&22

Selection table				
Type	Description	Contact code	Ordering code	Weight (kg)
 I: Cover mounting	 11 12 1NC	R	40090-1 / 40090-2	0.06
 II: Rail mounting	 11 12 1NO	S	40091-1 / 40091-2	0.05
The last number of ordering code: 1 - cover mounting; 2 - rail mounting				

Selection table					
Type	Description	Code	Ordering code	Weight (kg)	
	Spring-return control button ● Red ● Green ● Yellow	a b c	40092A 40092B 40092C	0.05	
	Mushroom stay-put emergency control button	Red	d	40093	0.05
	Key-operated control button	Black	e	40094	0.05
	Rotary control button	Red	f	40095	0.05
	Mushroom turn-to-release emergency control button	Red	g	40096	0.05
	Double control button	Red/Green	h	40097	0.05
	Pushbutton with indicator ● Red ● Green ● Yellow	i j k	40098A 40098B 40098C	0.05	



Components for Control Stations

BA8050 Serise Explosion-proof Control Buttons

Technical data

Explosion-proof control buttons BA8050

Explosion protection

- Gas explosion protection
- Dust explosion protection

Ⓔ II 2 G Ex de IIC
Ex tD A21 T80°C IP65

Certificates

- For gas explosion protection
- For dust explosion protection

LCIE 07 ATEX 0006U; IECEx LCI 08.0013U; FM (USA)
PCEC (China)

Conformity to standards

EN 60079-0:2004, EN 60079-1:2004, EN 60079-7:2003
IEC 60079-0:2004, IEC 60079-1:2003, IEC 60079-7:2001
IEC 61241-0:2004, IEC 61241-1:2004

Enclosure material

Polyamide (PA66)

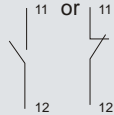
Rated voltage

Max. 415V AC

Rated current

6A

Contact type



Switch capacity

AC 11, cosj=0.7	230V-4A	415V-2.5A
DC1 L/R=1ms	60V-4A	110V-2.5A
DC11 L/R=15ms	60V-6A	110V-2.5A
L/R=30ms	4A	1.6A
L/R=100ms	2.5A	1.0A

Mechanical life

10⁶ times

Electrical life

10⁶ times

Ambient temperature

-20°C ~ +70°C

Terminal

Suitable for 2.5mm² cable

Button element

Material

Polyamide (PA66)

Washer


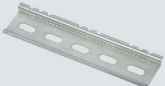
Silicon rubber

Function

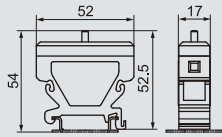
- Spring-return control button
- Mushroom stay-put emergency control button
- Key-operated control button
- Rotary control button
- Double control button
- Mushroom turn-to-release emergency control button

Spring-return control button
Self-latching when pulled, self-locking
Rotate to lock; release with key, key movable in both ways
Two-position switch function, key movable in 90°
Spring-return control button, 1 control button element has the function of 2 control buttons
Rotary resetting control button; self-locking

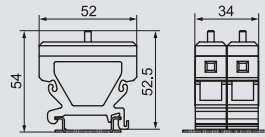
Accessories

Description	Material	Ordering code	Weight (kg)
Cover mounting bracket 	PC	40098	0.01
Rail 	aluminium alloy (1m)	40120	0.12

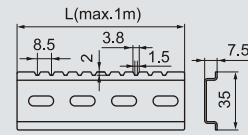
Dimension drawings (all dimensions in mm) - subject to alteration



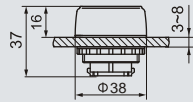
Control button, single (rail mounting)



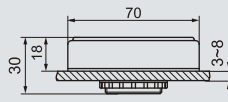
Control button, double (rail mounting)



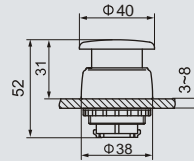
Rail



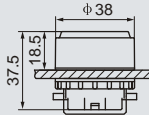
Spring-return control button



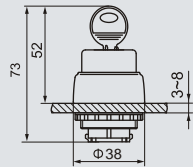
Double control button



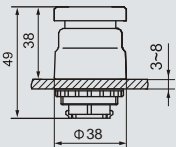
Mushroom stay-put emergency control button



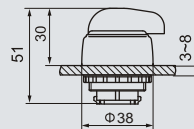
Pushbutton with indicator



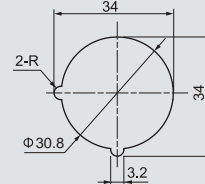
Key-operated control button



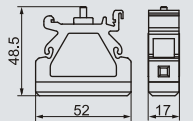
Mushroom turn-to-release emergency control button



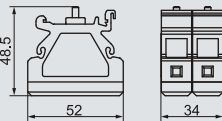
Rotary control button



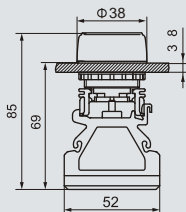
Mounting hole



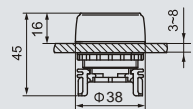
Control button, single (cover mounting)



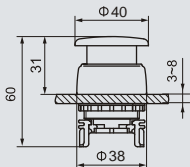
Control button, double (cover mounting)



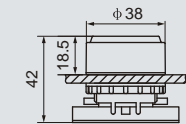
Control button cover mounting



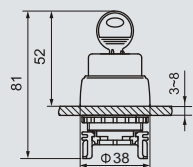
Operation for spring-return control button



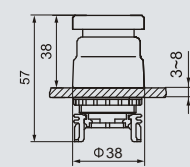
Mushroom stay-put emergency control button



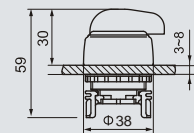
Pushbutton with indicator



Key-operated control button



Mushroom turn-to-release emergency control button



Rotary control button



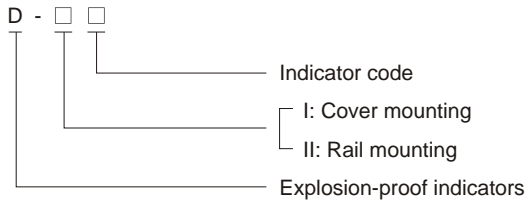


Components for Control Stations BD8050 Series Explosion-proof Indicators

- ◆ Explosion protection to
 - CENELEC
 - IEC
 - NEC
- ◆ Can be used in
 - Zone 1 and Zone 2
 - Zone 21 and Zone 22
- ◆ Available in
 - red
 - green
 - yellow
 - white
- ◆ Two mounting types
 - cover mounting
 - rail mounting

■ Catalogue number logic

BD8050(D for short)



Zones 1&2; 21&22

Selection table

Type	Voltage	Schematic diagram	Colour	Code	Ordering code	Weight (kg)
Explosion-proof Indicator  I: Cover mounting  II: Rail mounting	Rated voltage: AC 230V...AC 415V Voltage range: -10%...+6% Frequency: 0Hz...60Hz		Red	Ra	40099A/40099B	0.05
			Green	Ga	40100A/40100B	
			Yellow	Ya	40101A/40101B	
			White	Wa	40102A/40102B	
	Rated voltage: AC/DC 48V...110V Voltage range: -10%...+6% Frequency: 0Hz...60Hz		Red	Rb	40103A/40103B	0.05
			Green	Gb	40104A/40104B	
			Yellow	Yb	40105A/40105B	
			White	Wb	40106A/40106B	
	Rated voltage: AC/DC 12V...36V Voltage range: -10%...+6% Frequency: 0Hz...60Hz		Red	Rc	40107A/40107B	0.05
			Green	Gc	40108A/40108B	
			Yellow	Yc	40109A/40109B	
			White	Wc	40110A/40110B	
Rated voltage: DC 220V...380V Voltage range: -10%...+6%		Red	Rd	40111A/40111B	0.05	
		Green	Gd	40112A/40113B		
		Yellow	Yd	40113A/40113B		
		White	Wd	40114A/40114B		
Indicator cover 			Red	a	40115	0.05
			Green	b	40116	
			Yellow	c	40117	
			White	d	40118	



The last letter of ordering code: A-cover mounting; B-rail mounting.

Technical data

Explosion-proof indicators

BD8050

Explosion protection

Gas explosion protection

Ex II 2 G Ex de IIC Ex de IIC Gb

Dust explosion protection

Ex tD A21 T80°C IP65

Certificates

For gas explosion protection

LCIE 09 ATEX 3098U; IECEx CQM 11.0012U; FM (USA)

For dust explosion protection

PCEC (China)

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

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

Rated voltage

12V...415V AC/DC (-10%...+6%)

Rated current

Max.15mA

Frequency

0Hz...60Hz

Rated output wattage

Max.1W

Service life

10⁶ hours

Ambient temperature

-20°C ~ +60°C

Colour

Red, green, yellow, white

Lamp

LED

Enclosure material

Polyamide (PA66)

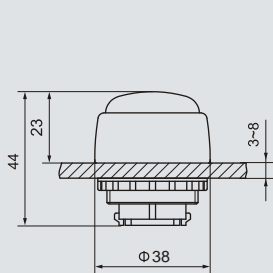
Terminal

Suitable for 2.5mm² cable

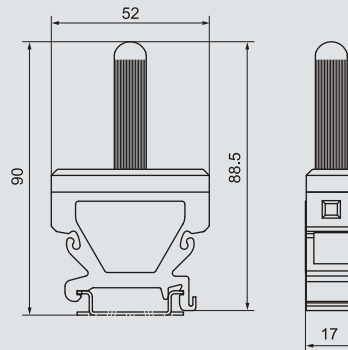
Indicator cover material

PC

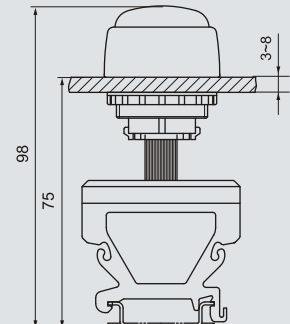
Dimension drawings (all dimensions in mm) - subject to alteration



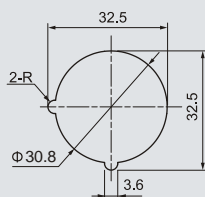
Indicator cover



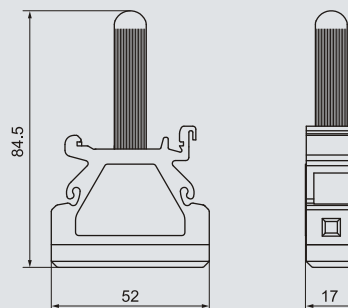
Explosion-proof indicator
(rail mounting)



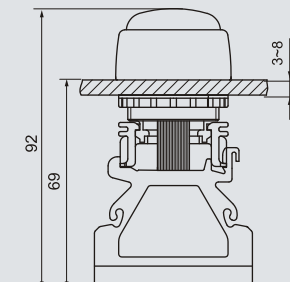
Rail mounting



Mounting hole



Explosion-proof indicator
(cover mounting)



Cover mounting

Components for Control Stations

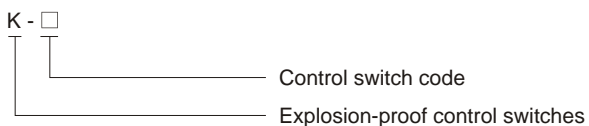
BK8050 Series Explosion-proof Control Switches

- ◆ Explosion protection to
 - GENELEC
 - IEC
 - NEC
- ◆ Can be used in
 - Zone 1 and Zone 2
- ◆ Max. 6 poles.
- ◆ Available in latching and spring-return forms.



■ Catalogue number logic

BK8050(K for short)



Zones 1&2

Selection table of control switches

Control switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
a				a.Functional wiring is the same as double buttons with auto-reset function.
b				B.Functional wiring is the same as double buttons; auto-reset after start; lock-stop gear added to avoid mistake operation.
c				c.Button with 2 NO contacts and available at auto-reset function. Suitable for high-voltage engine control circuit or function panel uses switch code "a" .
d				d.Low-power switch.
e				e.Function is the same as three buttons; able to control engine in forward and backward rotation. FW&BW starting positions can auto-reset.
f				f.Selection switch with stop gear.
g				g.Be equal to mounting two buttons and one changeover switch in one axis. Possible to output contact signal or monitoring signal between start and stop.
h				h.Multi-signals transmit gradually.



Components for Control Stations BK8050 Series Explosion-proof Control Switches

Selection table of control switches				
Control switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
i				I. Add function of transmitting resultant signal on the base of function panel uses switch code "h" .
j				j. Two positions step; change-over gradually.
k				k. Changeover switch.
i				I. Selection switch with three poles and two launches.
m				m. Three-position changeover switch among auto, manual and start; auto-reset after start; it can convert to auto gear only after passing stop gear.
n				n. Structure is a little different to universal structure of switch code "m" ; it directly rotates to auto gear without passing stop gear after starts.



Selection table of control switches

Control switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
o				O. Double contacts auto reset for start, with lock-stop gear; lock switch at stop gear to prevent mistake operation.
p				p. Double contacts for stop, to substitute switch code "a" and "c" for start and stop; auto-reset.
p				q. Stop with double contacts, with lock stop gear; auto-reset after start; possible to add lock-stop gear to add lock-stop gear to lock switch at stop gear to prevent mistake operation.
r				r. Double contacts for both start and stop; it is same as universal panel of switch code "a", with auto-reset for start and stop.
s				s. Transmit a contact signal before start and stop.
t				t. With lock-stop gear for start and stop to prevent mistake operation; without auto-reset.
u				u. Double-control selection switch.
v				v. Changeover switch for voltage phase-changing and measuring.



Selection table of control switches

Control switch code	Chart of contact	Equivalent switch	Position (solid line: location; dash line: spring return)	Instruction for equivalent function
W				w. One 2NO auto-reset pushbutton, both left and right are the same.
X				x. Two 2NO auto-reset buttons.

Technical data

Explosion-proof control switches BK8050

Explosion protection

Gas explosion protection

II 2 G Ex de IIC Ex de IIC Gb

Dust explosion protection

Ex tD A21 T80°C IP65

Certificates

For gas explosion protection

LCIE 09 ATEX 3096U; IECEX CQM 11.0011U; FM (USA)

For dust explosion protection

PCEC (China)

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

Enclosure material

Plastic

Rated voltage

Max. 415V AC

Rated current

16A

Switch angle

$n \times 45^\circ$ / $n \times 90^\circ$

Service life

10^5 times

Ambient temperature

-20°C ~ +50°C

Cable connection

2.5mm²

Handle material

PC

Panel material

ABS

Seal material

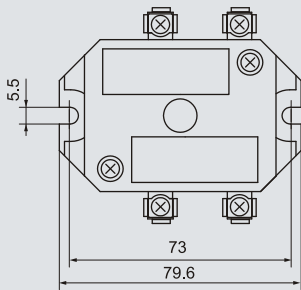
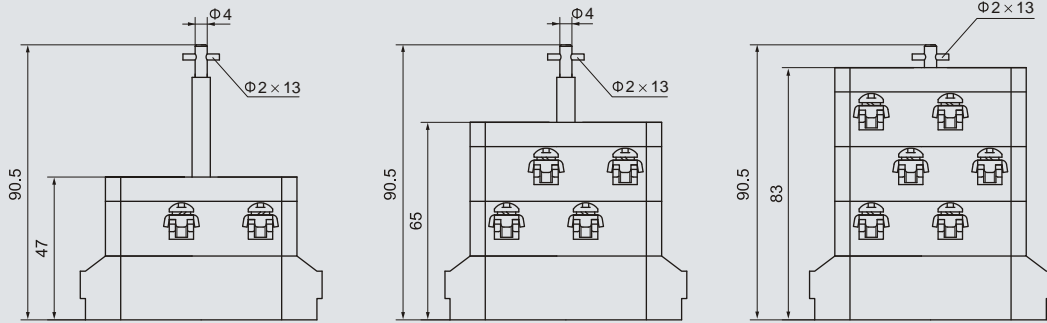
NBR



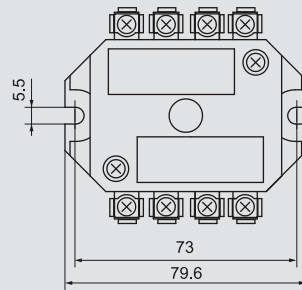
Accessories

Description	Illustration	Ordering code	Weight (kg)
Operation handle (padlockable)		40119	0.05

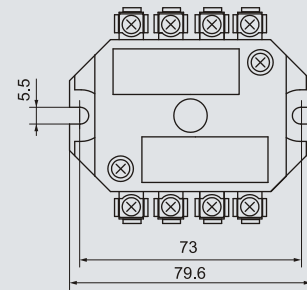
Dimension drawings (all dimensions in mm) - subject to alteration



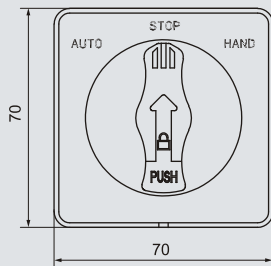
Control switch 2 poles



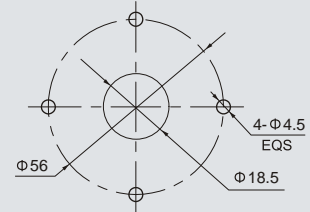
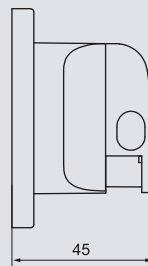
Control switch 3 or 4 poles



Control switch 6 poles



Operation handle



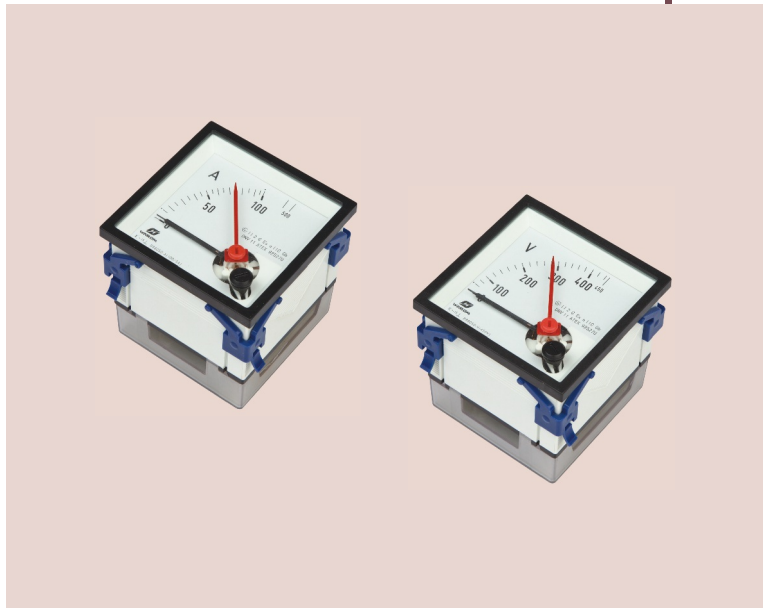
Mounting hole



Components for Control Stations

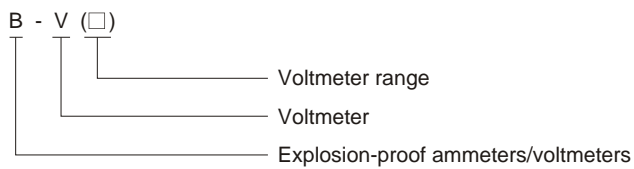
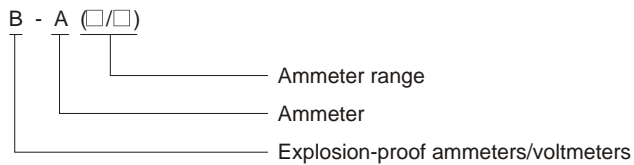
BB8050 Series Explosion-proof Ammeters/Voltmeters

- ◆ Explosion protection to
 - CENELEC
 - IEC
- ◆ Can be used in
 - Zone 1 and Zone 2
- ◆ Fast comparison of measured with set values
- ◆ Versions available
 - Ammeter (type 72)
 - Voltmeter (type 72)



■ Catalogue number logic

BB8050(B for short)




Zones 1&2


Components for Control Stations

BB8050 Series Explosion-proof Ammeters/Voltmeters

Selection table

Type	Description	Secondary current	Specification	Overload times	Ordering code	Weight (kg)
Ammeter BB8050-A(□/□) 	Connect to current transformer (secondary current 5A or 1A)	5A	10A	5	40121	0.20
		1A			40122	
		5A	15A	5	40123	
		1A			40124	
		5A	20A	5	40125	
		1A			40126	
		5A	25A	5	40127	
		1A			40128	
		5A	30A	5	40129	
		1A			40130	
		5A	40A	5	40131	
		1A			40132	
		5A	50A	5	40133	
		1A			40134	
		5A	60A	5	40135	
		1A			40136	
		5A	75A	5	40137	
		1A			40138	
		5A	100A	5	40139	
		1A			40140	
5A	150A	5	40141			
1A			40142			
5A	200A	5	40143			
1A			40144			
5A	250A	5	40145			
1A			40146			
5A	300A	5	40147			
1A			40148			


Selection table

Type	Description	Specification	Ordering code	Weight (kg)
Voltmeter BB8050-V(□) 	Connect to voltage transformer (secondary voltage 100V)	30V	40149	0.20
		50V	40150	
		75V	40151	
		100V	40152	
		120V	40153	
		150V	40154	
		200V	40155	
		250V	40156	
		300V	40157	
		400V	40158	
		450V	40159	
		600V	40160	
		450V~450kV	40161	

Components for Control Stations BB8050 Series Explosion-proof Ammeters/Voltmeters

Technical data

Explosion-proof ammeters/voltmeters BB8050

	Ammeter	Voltmeter
Explosion protection	Ⓔ II 2 G Ex e IIC Gb	Ⓔ II 2 G Ex e IIC Gb
Certificates	DNV 11 ATEX 92527U; IECEx CQM 11.0031U	DNV 11 ATEX 92527U; IECEx CQM 11.0031U
Conformity to standards	EN 60079-0: 2009, EN 60079-7:2007 IEC 60079-0:2007, IEC 60079-7:2006	EN 60079-0: 2009, EN 60079-7:2007 IEC 60079-0:2007, IEC 60079-7:2006
Enclosure material	Flame retardant plastic	Flame retardant plastic
Insulation voltage	690V AC	690V AC
Frequency	50/60Hz DC available	50/60Hz DC available
Working mode	Electromagnetic type (moving iron)	Electromagnetic type (moving iron)
Accuracy	Class 1.5	Class 1.5
Overload times	5 times 3 or 6 times on request.	
Ambient temperature	-20°C ~ +60°C	-20°C ~ +60°C
Cable connection	Max. 2.5mm ²	Max. 2.5mm ²
Size	72 x 72mm	72 x 72mm

Dimension drawings (all dimensions in mm) - subject to alteration

