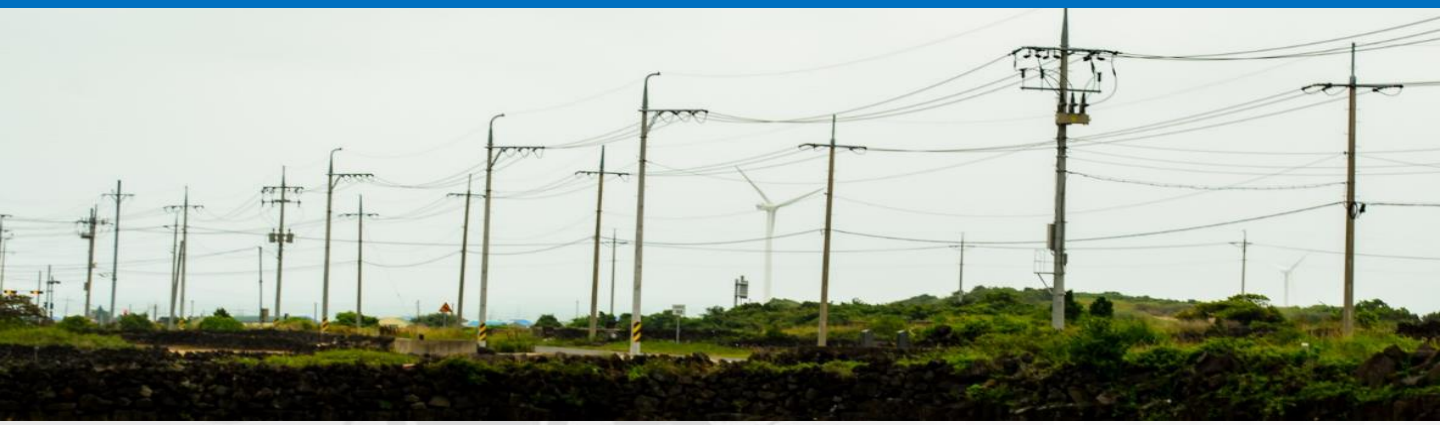
BR10-PS Series Switch for Distribution Automation and Protection



BR10-PS Series

Automatic Switch

Upto 38kV

Buheung BH SYSTEM Co., Ltd

Your system more convenient , and more reliable

Introduction

The BR10-PS series automatic switches are a kind of automated load break switch installed on poles or in substations in low and medium voltage distribution networks with the dedicated controls.

These switches are used for making and breaking loads below rated current by remote and manual operations, and integrating system for operation of distribution automation system using various communications, site-centered auto-sectionalizing to isolate faulty sections from the system, and load shedding to improve power quality interfacing with dedicated controls.

The BR10-PS series switches are SF6 gas insulated load break switch adopting arc extinguishing method of puffer type and tungsten-copper contact to ensure adequate electrical durability during opening and closing.

The BR10-PS series switches use a spring toggle mechanism with single spring to guarantee a constant operating time of less than 1 second.

The BR10-PS series switches guarantee a constant operating time less than 1 second by adopting a spring toggle mechanism with single spring. It is possible to perform manual operations with a hook stick as well as electrical operations by motor drive. And manual operations on the ground is allowed through an optional operating mechanism, ground actuator.

The BR10-PS series switches have built-in contacts and sensors for line monitoring, fault detection, and automatic line protection. For those operations, voltage sensors are built into each bushing of each side in the switch, and current sensors are built into each bushing of the source side in the switch. In addition to main contact position information, gas pressure contact and status contact of the locking device are provided to the control.

The BR10-PS series switches are adopted high-quality polymeric bushing that has been proven in the field for years. Universal clamp or NEMA PAD type terminals are provided as bushing terminal. Wildlife protectors to prevent exposure of the terminal are provided as an option.

Various mounting bracket types can be provided for round poles, square poles, frame structure of substations, and gantry structures.

The control cable for connecting various signals between the switch and the control is made of high quality materials with ultraviolet resistance, and all connectors are watertight and all parts soldered in the connectors connected to the control cable are molded using moisture resistance material to prevent degradation of characteristics due to moisture.

The tank of the BR10-PS series switch is basically made of stainless steel, and has the operating handle to be operated with a hook stick from the ground, the bracket for surge arrester installation is provided either top or bottom part as an option, and the ground terminal is equipped on the switch for a reliable ground. In addition, the overpressure relief device is equipped to release pressure generated by an internal fault or arc on the back of the tank.

On the underside of the switch, there is main contact position indicator, gas status indicator, and motor box for electrical operation so that the status can be checked on the ground. The gas pressure gauge is provided as an option, and valve for gas filling is supplied by default.

Inside of the BR10-PS series switches, the circuit for CT open protection and voltage divider for the second voltage of voltage sensors are equipped. The BR10-PS series switches are provided voltage signals to the control through capacitive voltage sensors and have 1000:1 turn ratio CT by default.

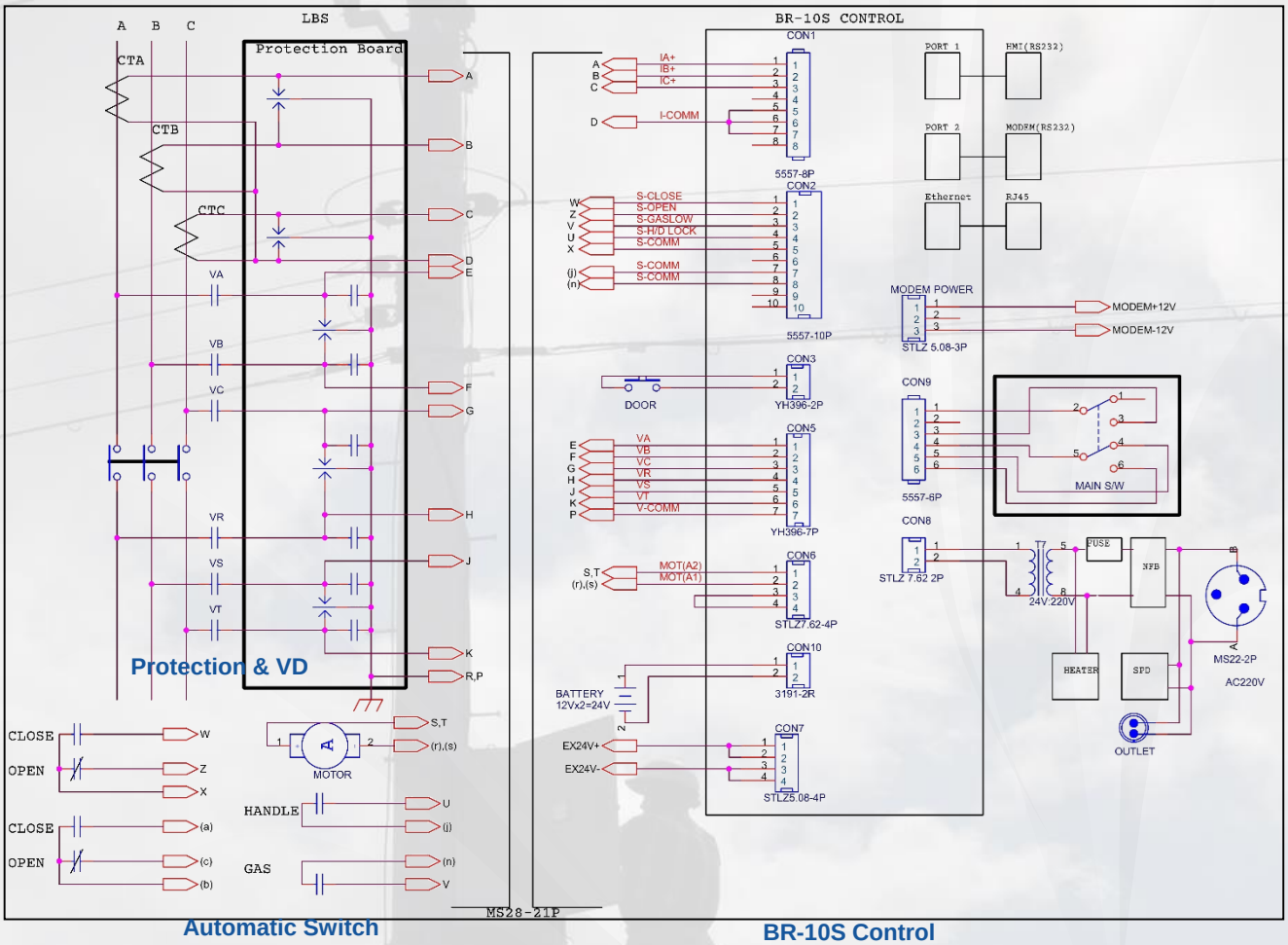
Available Options and Accessories

- Ground actuator set for manual operation to the switch on the ground
- Control cable of more than standard length
- Surge arrester and mounting bracket
- External PT for auxiliary supply and mounting bracket
- Gas pressure gauge
- Brackets other than standard mounting brackets
- Universal clamp, and operation counter
- BR-10S or BR-10SN control
- Electrical control for LBS

Interface between the BR10-PS Switch and the Control

The BR10-PS series switches are connected to the BR-10S/SN control via control cables as shown below.

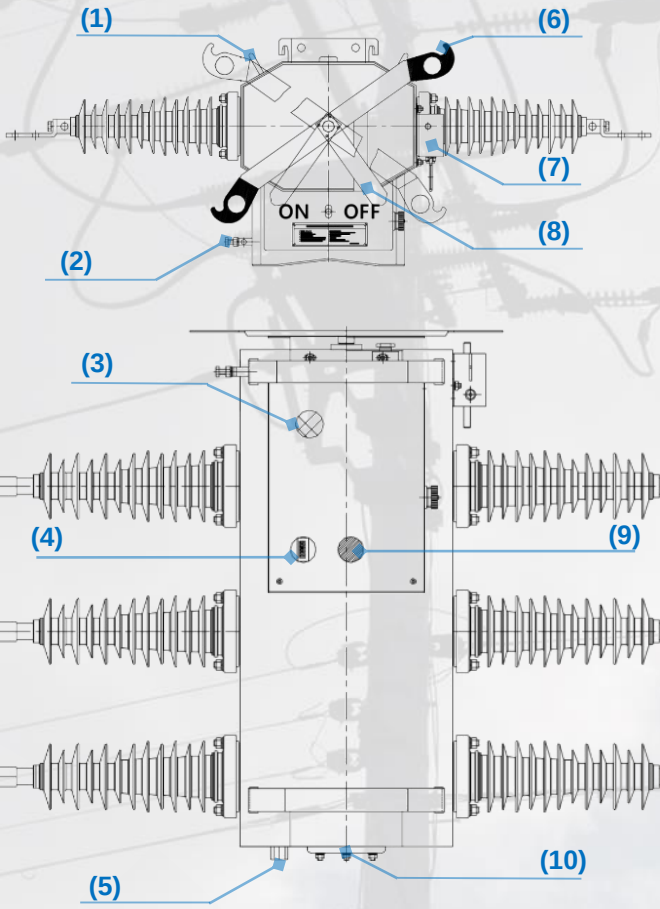
Three-phase voltages on the source and load side, three phase currents, main contact position information and its auxiliary contact, gas pressure and locking device status contact are provided to the control through the control cable. In addition, the motor drive signal to operate the switch from the control is connected to the switch.

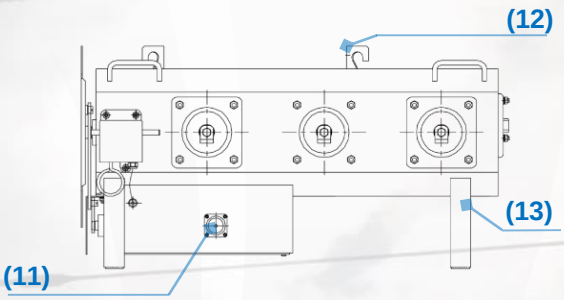


Block diagram of the BR10-PS Switch and the control

Note : The connection between the control and the switch may vary depending on the control used.

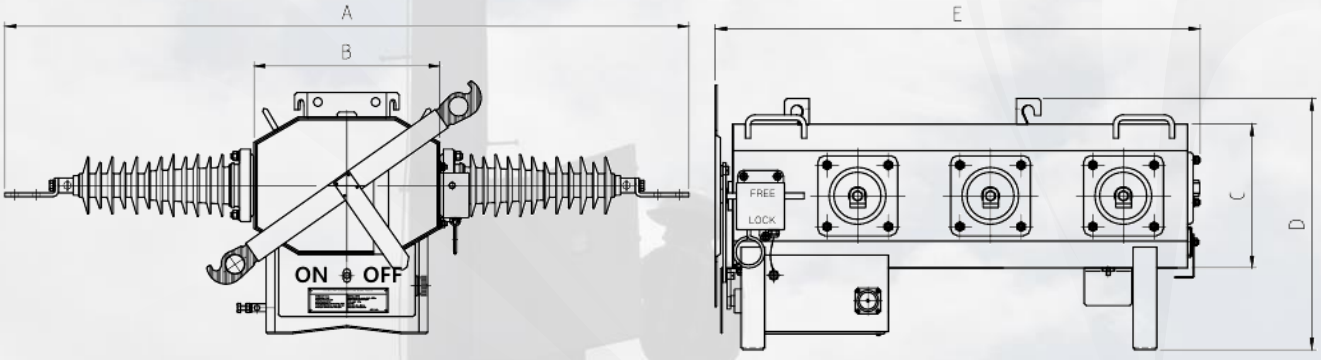
External Appearance





(1) : Carrying Handle
(2) : Ground terminal
(3) : Low Gas Target
(4) : Operations Counter
(5) : Filling Valve
(6) : Operating Handle
(7) : Locking Device
(8) : Front Position Indicator
(9) : Bottom Position Indicator
(10): Overpressure relief device
(11): Receptacle for Control Cable
(12): Hanger Bracket Fixing Part
(13): Stabilizer

Dimensions(mm)

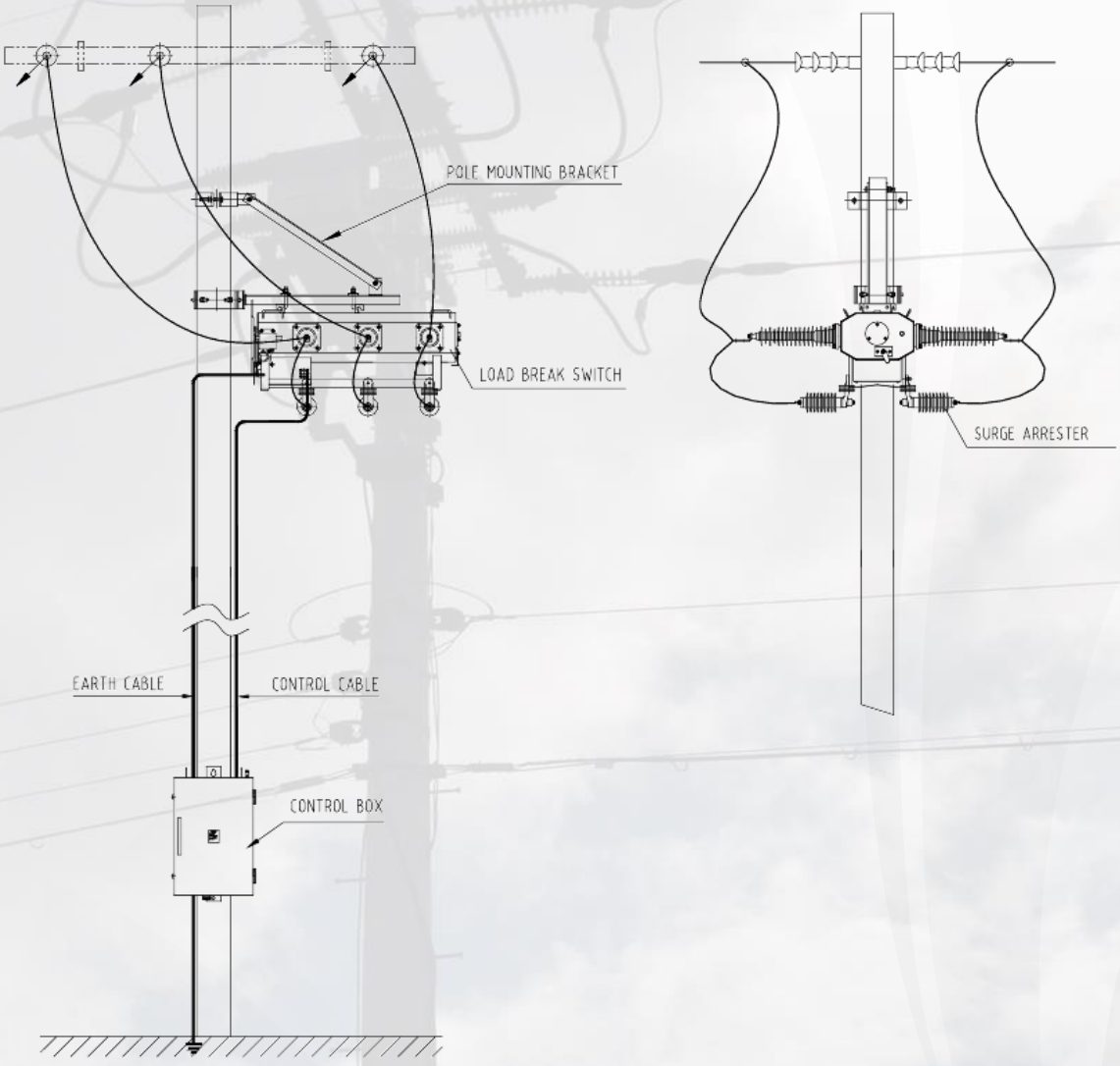


	A	B	C	D	E	P to P
15.5kV	1400	380	280	490	949	260
25.8kV	1400	380	280	490	949	260
38kV	1700	430	280	507	1189	350

Ratings

Model Number	BR10-PS-25	BR10-PS-25	BR10-PS-36
Rated current(I_r)	630A		
Rated lightning impulse withstand voltage(U_p) - common value / across the isolating distance	110/121kV	150kV	175/195kV
Rated power-frequency withstand voltage(U_d) - common value / across the isolating distance	50/55kV	60/66kV	70/80kV
Rated frequency(F_r)	50/60Hz		
Rated short-time withstand current(I_k) / duration(T_k)	16kA/3sec,	20kA/3sec,	25kA/1sec
Rated short circuit making making current(I_{ma})	40kA		
Rated cable-charging breaking current(I_{cc})	25A		25A
Rated line-charging breaking current(I_{lc})	1.5A		2A
Rated earth fault breaking current(I_{ef1})	48A		75A
Rated cable- and line-charging breaking current under earth-fault conditions(I_{ef2})	27.7A		43.3A
No load transformer breaking current	25A		
Rated filling pressure for operation(P_{rm})	0.07Mpa		0.1Mpa
Minimum functional pressure for operation(P_{mm})	0.01Mpa		0.03Mpa
Rated auxiliary and control voltage(U_a)	DC 24V		
Creepage distance	900mm	900mm	1350mm
Phase to phase distance Phase to phase clearance	260mm 225mm		350mm 315mm
Mechanical endurance class	M2(5000)		
Electrical endurance class	E3		
Weight	100kg		124kg
Degrees of protection – Mechanism / Control Part	IP65 / IP54, default		
Ambient temperature	-25 to +55℃		
Altitude	Up to 1,000m		
Operating mechanism	Manual or motorized operation		
Applied Standard	IEC 62271-103		

General Arrangement



Note : The ratings and diagrams in this document may be changed arbitrarily for better performance or user specification.

Contact
www.bh-system.com
info@bh-system.com
T 82-31-689-3212 F 82-31-689-3213