

ø30 ARN/ARNS series Mono-lever Switches

Single lever offers up to four directions of control

Mono-lever switches operate in four directions using a single lever. Switch contacts are actuated in the direction in which the lever is pushed, enabling quick and accurate control in any desired direction. Ideal for machine tools and industrial machines. The lever action can be maintained or spring-returned in any combination.

Also available with interlock mechanism to prevent inadvertent actuation.



Specifications and Ratings

Contact Ratings

Contact Block	Type BR
Rated Insulation Voltage	600V
Rated Continuous Current	10A
Contact Ratings by Utilization Category IEC 60947-5-1	AC-15 (A600) DC-13 (P600)

Characteristics

• Contact Ratings by Utilization Category

Operational Voltage			24V	48V	50V	110V	220V	440V
Operational Current	AC 50/60 Hz	AC-12 Control of resistive loads and solid state loads	10A	—	10A	10A	6A	2A
		AC-15 Control of electromagnetic loads (> 72 VA)	10A	—	7A	5A	3A	1A
	DC	DC-12 Control of resistive loads and solid state loads	10A	5A	—	2.2A	1.1A	—
		DC-13 Control of electromagnets	4A	2A	—	1.1A	0.6A	—

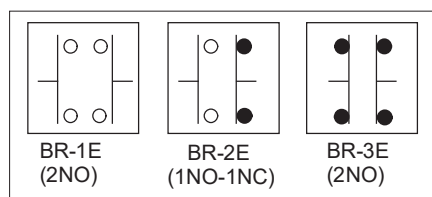
Note: The operational current represents the classification by making and breaking currents (IEC 60947-5-1).

Specifications

Contact Arrangement	Double-break slow action Each contact block contains two independent contacts (2NO, 1NO-1NC, or 2NC) Up to four contact blocks can be mounted
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Between live and dead parts: 2,500V AC, 1 minute
Mechanical Life	500,000 operations minimum
Electrical Life	(Interlocking type: 250,000 operations minimum)
Operating Temperature	-25 to +50°C (no freezing)
Operating Humidity	45 to 85% RH (no condensation)
Lever Knob	Black

BR Contact Block

The contact block is made of nylon resin. Each contact block contains two pairs of double-break silver contacts. There are three types as shown in the diagram below and up to four contact blocks can be mounted in any direction. A wide variety of circuits allows diverse combinations of control.


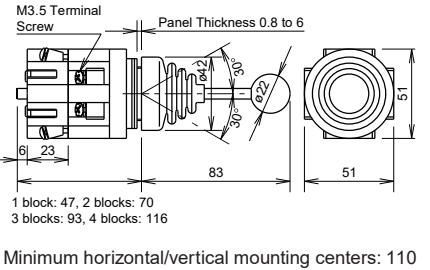

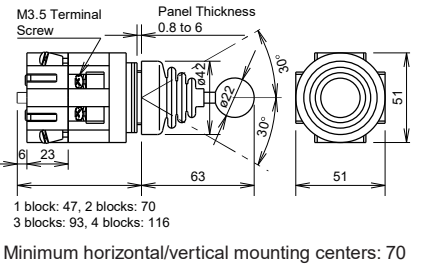

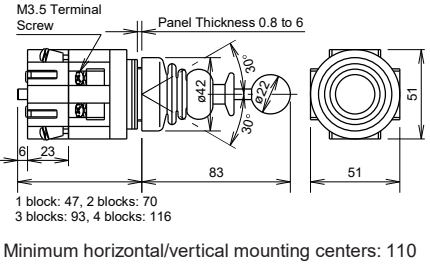


Control Mechanism

When the operator lever is pushed to about 30° in each direction from the neutral position, the contact in that direction activates. The lever can operate in two, three, or four directions, and combinations of maintained or spring-return from any position are possible.

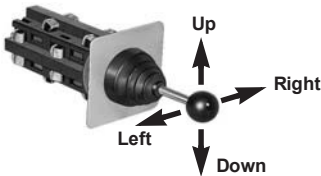
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Types

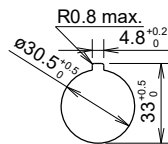
Operator Type	Position	Lever Action	Type No.	Dimensions (mm)
	2-position (Up-Down)	Maintained	ARN2-1010-④B	
		Spring return	ARN2-2020-④B	
	2-position (Left-Right)	Maintained	ARN2-0101-④B	
		Spring return	ARN2-0202-④B	
	4-position (Up-Down-Left-Right)	Maintained	ARN4-1111-④B	
		Spring return	ARN4-2222-④B	
	2-position (Up-Down)	Maintained	ARNS2-1010-④B	
		Spring return	ARNS2-2020-④B	
	2-position (Left-Right)	Maintained	ARNS2-0101-④B	
		Spring return	ARNS2-0202-④B	
	4-position (Up-Down-Left-Right)	Maintained	ARNS4-1111-④B	
		Spring return	ARNS4-2222-④B	
 <p>The operator lever is locked only in the center position.</p>	2-position (Up-Down)	Maintained	ARNL2-1010-④B	
		Spring return	ARNL2-2020-④B	
	2-position (Left-Right)	Maintained	ARNL2-0101-④B	
		Spring return	ARNL2-0202-④B	
	4-position (Up-Down-Left-Right)	Maintained	ARNL4-1111-④B	
		Spring return	ARNL4-2222-④B	

- Specify Contact Arrangement from the table below in place of ④.
- Terminal covers are ordered separately.

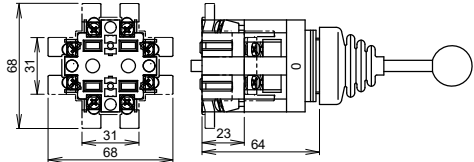
• Lever Operator Position



• Panel Cut-Out



• Mono-Lever with Terminal Cover



Ordering Information

When ordering, specify items ① to ⑤ according to the following example.

[Example] ① ARN ② 4 - ③ 1012 - ④ 2 0 0 2 1 1 - ⑤ B

Up Right Down Left

① Type	② No. of Contact Blocks	③ Lever Action	④ Contact Arrangement	⑤ Lever Knob Color
ARN ARNS ARNL	1: 1 block 2: 2 blocks 3: 3 blocks 4: 4 blocks	Order of Entry: Up→Right→ Down→Left 1: Maintained 2: Spring return 0: Blocked	Order of Entry: Up→Right→ Down→Left 10: 1NO 01: 1NC 11: 1NO-1NC 20: 2NO 02: 2NC 00: Blocked	B: black

Contact Block Position	Terminal No.	Direction of Lever Operation				Terminal No.	Contact Block Type
		Lever Operation Mode					
		1	0	1	2		
1	1	NO	-	-	-	2	BR-2E
	3	-	-	NC	-	4	
2	5	-	NO *	-	-	6	BR-1E
	7	-	-	-	NO	8	
3	9	NO	-	-	-	10	BR-2E
	11	-	-	NC	-	12	
4	13	-	NC *	-	-	14	BR-3E
	15	-	-	-	NC	16	

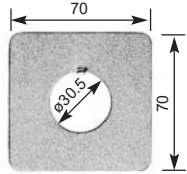





*: Contacts marked with * do not operate.

- To calculate the number of contact blocks required, add the number of NO and NC contacts on each pair of adjoining positions (up + right, right + down, down + left, and left + up). The largest of the four sums is the number of contact blocks required. Up to four contact blocks may be mounted.
- When UL and CSA markings are required on the mono-lever UL switch, specify as shown below.

[Example] ARN4-1012-20000211-B-U

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Accessories and Maintenance Parts

Shape	Specification	Type No.	Ordering Type No.	Package Quantity	Description
Nameplate		MLO	MLO	1	Chrome-plated brass (matte surface)
			MLOPN10	10	
Terminal Cover		ARN-VL2	ARN-VL2	1	<ul style="list-style-type: none"> Terminal covers are ordered separately. When ordering, specify the Type No. and the required quantity. Order 2 pieces for each contact block.
Contact Block (BR Type)		BR-1E	BR-1E	1	• 2NO contact
		BR-2E	BR-2E	1	• 1NO-1NC contact
		BR-3E	BR-3E	1	• 2NC contact
Bellows		ARN-BL	ARN-BL	1	• For ARN/ARNS (Locking ring not included)
Bellows (Interlocking Type)		ARNL-BL	ARNL-BL	1	• For ARNL (Locking ring not included)
Knob		ARNB-①	ARNB-①	1	Specify a color code in place of ①. B (black), G (green), R (red) • For ARN/ARNS