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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.



Applicable Standards	Mark	File No. or Organization
UL 508	UL LISTED	UL Listing File No. E68961
CSA C22.2 No.14	CSA	CSA File No. LR21451

Specifications and Ratings

Contact Ratings

Contact Block	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
Operating Temperature	–25 to +50°C (no freezing)
Storage Temperature	–35 to +80°C (no freezing)
Operating Humidity	45 to 85% RH (no condensation)
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 (Interlocking: 250,000 operations minimum)
Electrical Life	
Lever Knob	Black
Weight (approx.)	276g (ARN4-1111-202020)

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.

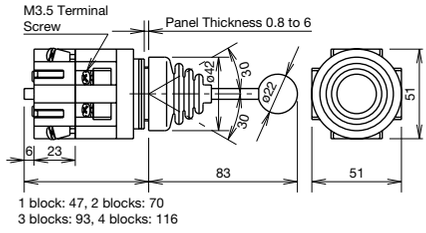
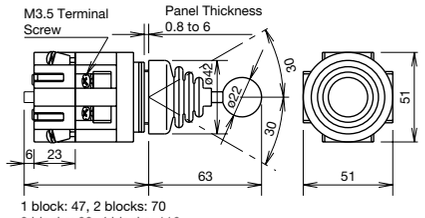
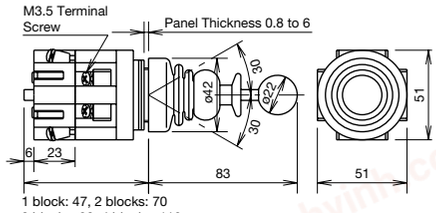
Control Mechanism

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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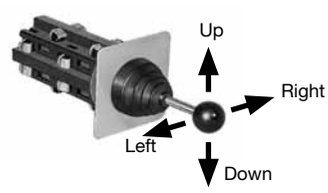
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Mono-lever Switches

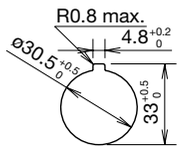
Operator	Position	Lever Action	Part No.	Dimensions (mm)
ARN (Long Lever) 	2-position (Up-Down)	Maintained	**ARN2-1010-④B**	 1 block: 47, 2 blocks: 70 3 blocks: 93, 4 blocks: 116 Minimum horizontal/vertical mounting centers: 110
		Spring return	**ARN2-2020-④B**	
	2-position (Left-Right)	Maintained	**ARN2-0101-④B**	
		Spring return	**ARN2-0202-④B**	
	4-position (Up-Down-Left-Right)	Maintained	**ARN4-1111-④B**	
		Spring return	**ARN4-2222-④B**	
ARNS (Short Lever) 	2-position (Up-Down)	Maintained	**ARNS2-1010-④B**	 1 block: 47, 2 blocks: 70 3 blocks: 93, 4 blocks: 116 Minimum horizontal/vertical mounting centers: 70
		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**	
ARNL (Interlocking)  The operator lever is locked only in the center position.	2-position (Up-Down)	Maintained	**ARNL2-1010-④B**	 1 block: 47, 2 blocks: 70 3 blocks: 93, 4 blocks: 116 Minimum horizontal/vertical mounting centers: 110
		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.

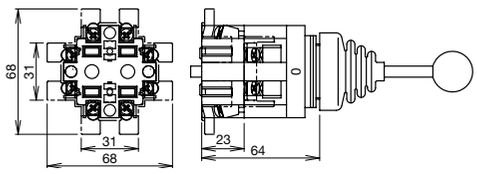
Lever Operator Position



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 20 00 02 11 – ⑤ B
(④: Up Right Down Left)

① Model	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 (Lever Operation Mode 1: Maintained 2: Spring return 0: Blocked) 1	0	1	2	Terminal No.	Contact Block Type
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	

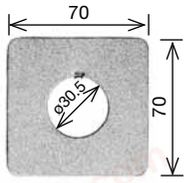
*: Contacts marked with * do not operate.

- 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 can be mounted.
- When UL and CSA markings are required on the mono-lever switch, specify as shown below.
  [Example] ARN4-1012-20000211-B-U

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ARN/ARNS Series Accessories and Replacement Parts ø30

Accessories and Maintenance Parts

Shape	Specification	Part No.	Ordering No.	Package Quantity	Description
Nameplate		**MLO**	**MLO**	1	Chrome-plated brass (matte surface)
			MLOPN10	10	
Terminal Cover		**ARN-VL2**	**ARN-VL2**	1	Terminal covers are ordered separately. When ordering, specify the Part No. and the required quantity. Order 2 pieces for each contact block.
Contact Block (BR)		**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)		**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