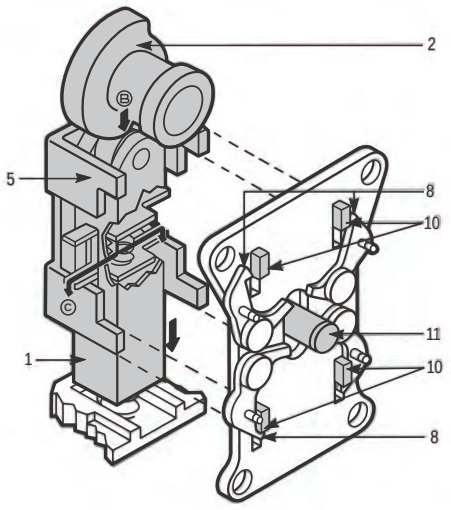
Design Features & Performance

3 N.O. - 3 N.C.

2 N.O. - 2 N.C.

1 N.O. - 1 N.C.



Snap-Lock Mechanism

1. Cam Follower
2. Cam
3. Return Spring
4. Fixed Base
5. Shuttle
6. Floating Arms
7. Compression Spring
8. Latches
9. Latch Plate
10. Ears, Shuttle
11. Operating Pin
12. Movable Contacts
13. Stationary Contacts
14. Contact Block
15. Contact Spring

WIDE RANGE OF OPERATION
MODULAR CONSTRUCTION
PRACTICAL FLEXIBILITY

Snap-Lock Limit Switches set the bar in the industry and are the best choice when it comes to today's tough requirements; regardless of size of type, we have the ideal Model to fit your need.

Snap-Lock Switches have been designed to meet virtually every conceivable condition of installation. These switches provide enduring, dependable "machine-life" service even while operating under the most harsh and demanding conditions while still delivering millions of consistently fast, accurate contacts.

Here are just few of the exceptional features built into each switch for maximum performance:

- Generous overtravel and by-pass.
- Flexibility of motion; clockwise and counter-clockwise
- Light operating torque.
- Fast contact action.
- Form Z contact arrangement.

Options Available

- Precious metal contacts for optimal performance.
- High temperture (20°C to +180°C) components and lubriants with aluminum housing.
- Low temperature (-40°C to +90°C) components and lubricants.

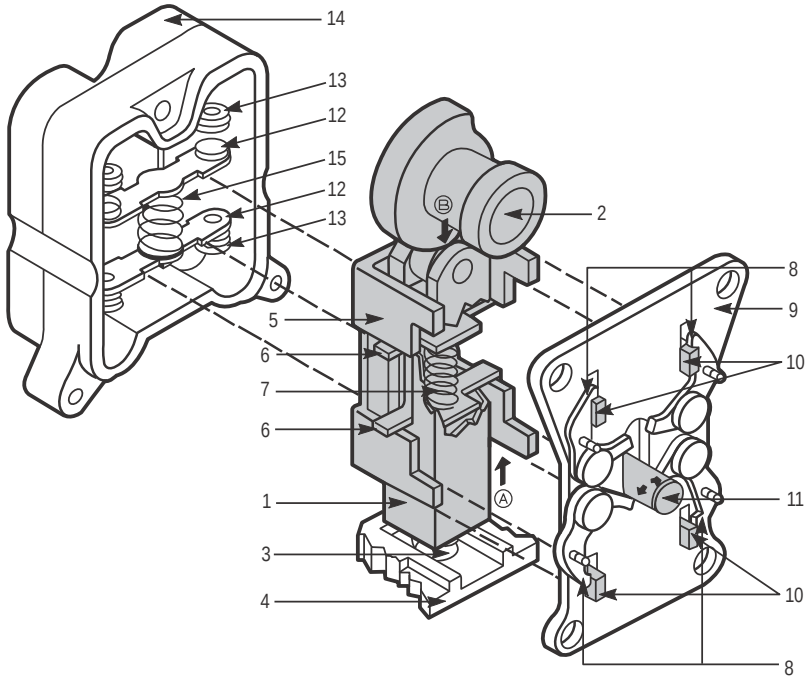
The Snap-Lock Mechanism is responsible for quickly and positively snapping the contacts open and closed and then locking them in either position. Here's how it works:

As the lever arm is moved the Cam (2) starts to rotate, this causes the cam follower to move in direction B. The Shuttle (5) is locked in place by Latches (8) which are engaged with the lower fingers (10) of the shuttle. This in turn causes the Floating Arm (6) to compress Spring (7) with resultant force in direction C. Operating Pin (11), an integral part of Cam Follower (1), moves downward as the cam continues to rotate; first releasing the upper Latches (8), they remain open and resting against the shuttle fingers, secondly the Operating Pin engages the lower latches. At a predetermined point the latches are forced open and disengage the shuttle fingers. At this point force C goes into action and snaps Shuttle (5) to the down position, contact transfer now takes place.

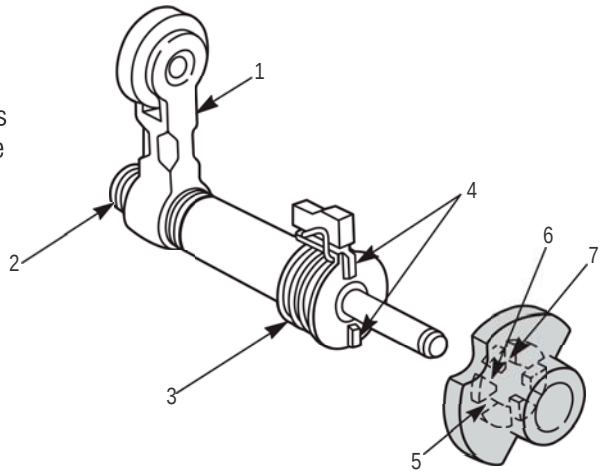
The Cam Follower is at the extreme end of its travel, Return Spring (3) has been compressed with resulting force in direction A. The Cam Follower is held in this position by the cam rise. Shuttle (5) is locked into position by the upper Latches (8).

To put the positive Snap-Lock mechanism into use in our switch, we added a pair of movable contact carriers (12) and two pairs of Stationary Contacts (13). The movable contact carriers are connected to the Shuttle (5) by means of a molded plastic carrier (not shown here). As a result, the movable contact carriers are moved from one set of stationary contacts to the other as the shuttle moves. The movable contact carriers are free to "float" and "self-align" with the Stationary Contacts for positive wiping action. The Stationary Contacts (13) are an integral part of the molded plastic Contact Block (14).

In the sketch the lower contacts are closed a little before the Shuttle (5) reaches the locked position and are held firmly together by the Contact Spring (15). When the lever arm allows the cam to return to its original position force A takes over and the process is simply reversed with the lower contacts being snapped "open" and the upper contacts then snapped "closed" and positively locked.



In most cases these switches are operated by some type of auxiliary lever (1). Namco Controls supplies a series of these (please see Product Information Sheets Series EL). Most Namco Controls supplied levers have serrated holes that match the switch operating shafts. The levers are locked in place by simply turning in -the screw (2) in the end of the switch operating shaft with an Allen wrench. (3/16") When the switch is operated by a force against the lever, clockwise or counterclockwise return torque is supplied by the self-contained torsion spring (3). This motion is transmitted to the cam by two clutch projections (4) that engage the cam slots (either 5, 6 or 7).



Specifications

1. Enclosure is water, oil and dust tight.
2. Enclosure meets NEMA Type 1, 4 and 13 requirements.
3. Contacts made of silver alloy. Contact shifting mechanism is locked in position by the latches until switch lever is actuated.
4. Standard Temperature Range: -20˚C to +90˚C
5. Operating lever is adjustable to any required position.
6. Operating Lever Angles (travel either clockwise or counterclockwise) maximum degrees of trip travel, reset travel, as well as total lever travel, are determined by the cam selected.
7. Operating Torques - Trip Torque varies from 15 to 33 in. lbs. depending on switch size and cam
8. Underwriters' Laboratories, Inc. Recognized. File No. E12967. (Except neutral position module)
9. Current Ratings:

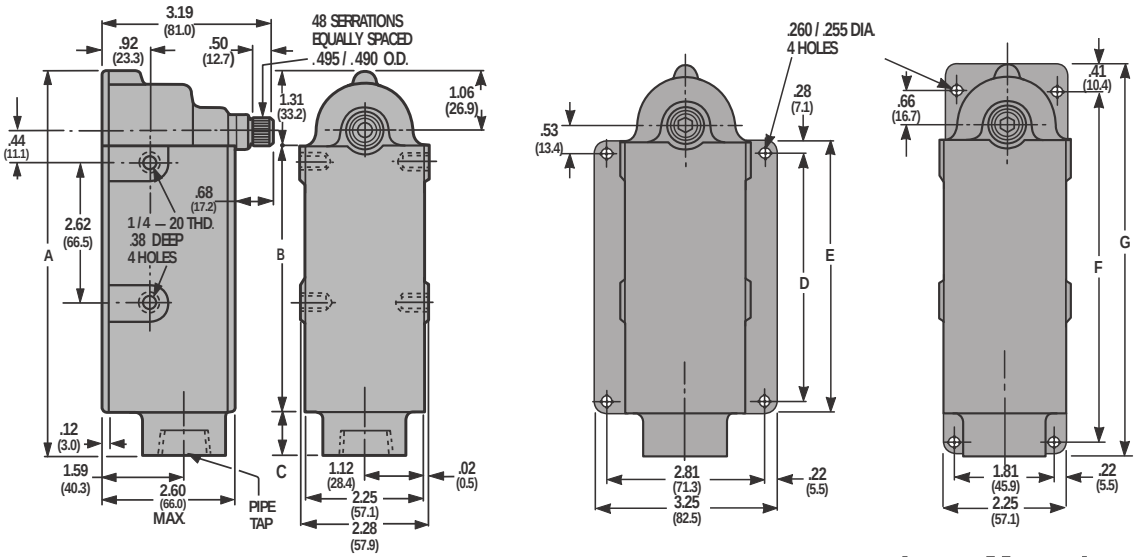
Voltage		For Neutral Position Only
125V-A.C.	20.0 Amps*	10.0 Amps*
250V-A.C.	15.0 Amps*	7.5 Amps*
480V-A.C.	10.0 Amps*	5.0 Amps*
600V-A.C.	5.0 Amps*	2.5 Amps*
125V-D.C.	5.0 Amps*	2.5 Amps*
250V-D.C.	1.5 Amps*	.75 Amps*

*75-100% Power Factor

For Marine or Off-Shore Requirements, See EA780, EA790 Series, Pages 56 through 59.
For Hazardous Location Requirements, See EA800 Series, Pages 60 through 61.

Dimensions and Mounting

Series EA700 Snap-Lock Limit Switches are carefully designed for flexibility in mounting arrangements. Basic design permits mounting for either side or back. Shown here are the (1) STANDARD for side mounting; (2) WIDE for back mounting; (3) LONG for back mounting.



Standard Mounting **Wide Mounting** **Long Mounting**

All dimensions given in US & Metric: Inches (mm)

CONTACT SEQUENCE	STANDARD SWITCH				MOUNTING STYLE			
	PIPE TAP SIZE	A	B	C	WIDE		LONG	
					D	E	F	G
1 N.O. - 1 N.C.	1/2-14 NPT	4.94	3	0.62	2.44	3	4.22	4.84
2 N.O. - 2 N.C.	1-11 1/2 NPT	7.06	4.94	0.81	4.38	4.94	6.41	7.06
3 N.O. - 3 N.C.	1-11 1/2 NPT	9.62	7.5	0.81	6.94	7.5	8.97	9.62

Cams Unlimited...Operating Sequence Unlimited

The versatility of the Snap-Lock mechanism is achieved with the use of a series of uniquely designed cams. A standard EA700 series switch, supplied with a combination B1/B2 cam.

Namco Controls offers a wide variety of cams which can be used in all EA700 series switches.

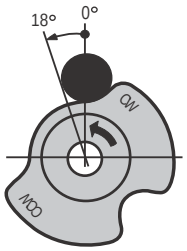
Typical Cams

Combination B1/B2 CAM

The following three operating sequences are built into the combination cam used in the standard EA700 switches; B1 Single Action CW, B1 Single Action CCW and B2 Double Action CW & CCW.

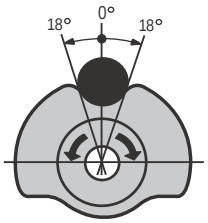
1. The contacts function when the lever is operated clockwise. The lever can be operated counterclockwise but the contacts will not operate.
2. The contacts function when the lever is operated counterclockwise. The lever can be operated clockwise but the contacts will not operate.
3. The contacts function when the lever is operated clockwise or counterclockwise.

B1 Single Action



Normally open to make (normally closed to break) IN ONE DIRECTION ONLY. Lever and cam are spring returned to starting position. Used on Single Action Switches only.

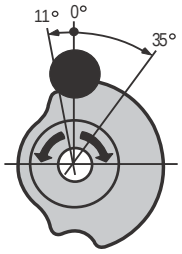
B2 Double Action



Normally open to make (normally closed to break) IN EITHER DIRECTION. Lever and cam are spring returned to starting position.

Neutral Position N Cam

The neutral position cam is designed for applications requiring a neutral position in the contact arrangement. Both the operating lever and cam are spring returned to starting position. The maximum lever travel in either direction is 90°.

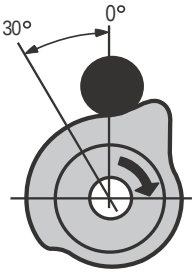


This is the contact action of neutral switches:

- As the lever is moved clockwise the lower contact transfers. As the lever is spring returned to starting position the lower contact is returned to its original position.
- As the lever is moved counterclockwise from starting position the upper contact transfers. As the lever is spring returned to starting position the upper contact returns.

Maintained Position Cam

Maintained Switches are available for applications that require maintained contacts and are available with two contact operations:



1. When the lever is moved clockwise the normally open contacts close and the normally closed contacts open. The lever is maintained in tripped position. As the lever is activated counterclockwise to starting position, normally open contacts open and normally closed contacts close.
2. When the lever is moved clockwise the normally open contacts close and the normally closed contacts open. This contact arrangement is maintained as the lever is spring returned to starting position and until the lever is moved counterclockwise when the normally open contacts open and the normally closed contacts close.

Specifications

1 N.O. - 1 N.C.

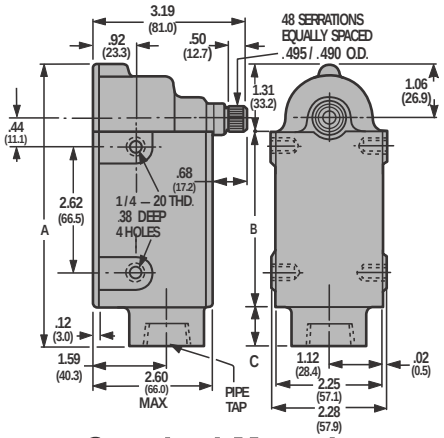
1. Enclosure is water, oil and dust tight.
2. Enclosure meets NEMA Type 1, 4 and 13 requirements.
3. Contacts made of silver alloy. Contact shifting mechanism is locked in position by the latches until switch lever is actuated.
4. Standard Temperature Range: -20˚C to +90˚C
5. Operating lever is adjustable to any required position.
6. Operating Lever Angles (travel either clockwise or counterclockwise) maximum degrees of trip travel, reset travel, as well as total lever travel, are determined by the cam selected.
7. Operating Torques - Trip Torque varies from 15 to 33 in. lbs. depending on switch size and cam selected.
8. Current Ratings:

Voltage		For Neutral Position Only
125V-A.C.	20.0 Amps*	10.0 Amps*
250V-A.C.	15.0 Amps*	7.5 Amps*
480V-A.C.	10.0 Amps*	5.0 Amps*
600V-A.C.	5.0 Amps*	2.5 Amps*
125V-D.C.	5.0 Amps*	2.5 Amps*
250V-D.C.	1.5 Amps*	.75 Amps*

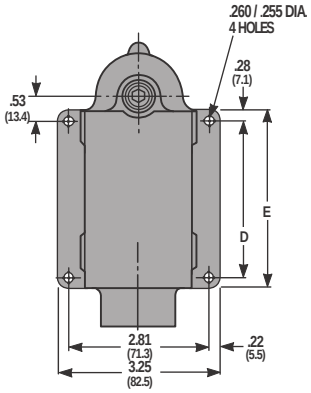
*75-100% Power Factor

Dimensions and Mounting

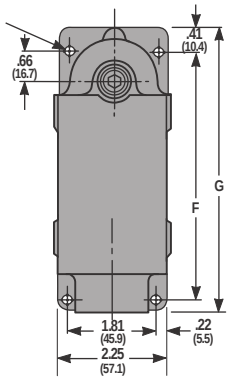
Series EA700 Snap-Lock Limit Switches are specifically designed for flexibility in mounting arrangements. Basic design permits mounting for either side or back. Shown here are the (1) STANDARD for side mounting; (2) WIDE for back mounting; (3) LONG for back mounting.



Standard Mounting



Wide Mounting



Long Mounting

All dimensions given in US & Metric: Inches (mm)

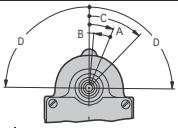
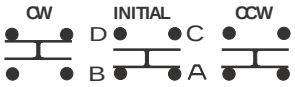
CONTACT SEQUENCE	STANDARD SWITCH				MOUNTING STYLE			
	PIPE TAP SIZE	A	B	C	WIDE		LONG	
					D	E	F	G
1 N.O. - 1 N.C.	1/2-14 NPT	4.94	3	0.62	2.44	3	4.22	4.84

Standard Switches

ORDERING INFORMATION

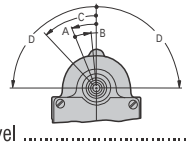
CW OPERATION ONLY (Combination B-1/B-2 Cam)

Contacts transfer when lever is operated CW. Lever can be operated CCW but contacts will not transfer.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	WIDE	LONG	
EA700-10000	EA700-40000	EA700-70000	
CONTACTS	**CIRCUITS**		A. Trip Travel ..... 18° B. Reset Travel ..... 14° C. Recommended Travel ..... 30° D. Total Travel Available..... 90° Torque (Inch Lbs.) 1 N.O. - 1 N.C. 15
1 N.O. 1 N.C.			

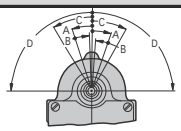
CCW OPERATION ONLY (Combination B-1/B-2 Cam)

Contacts transfer when lever is operated CCW. Lever can be operated CW but contacts will not transfer.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	WIDE	LONG	
EA700-10001	EA700-40001	EA700-70001	
CONTACTS	**CIRCUITS**		A. Trip Travel ..... 18° B. Reset Travel ..... 14° C. Recommended Travel ..... 30° D. Total Travel Available..... 90° Torque (Inch Lbs.) 1 N.O. - 1 N.C. 15
1 N.O. 1 N.C.			

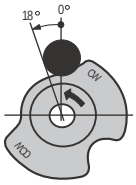
CW & CCW OPERATION ONLY (Combination B-1/B-2 Cam)

Contacts transfer when lever is operated CW or CCW.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	WIDE	LONG	
EA700-10100	EA700-40100	EA700-70100	
CONTACTS	**CIRCUITS**		A. Trip Travel ..... 18° B. Reset Travel ..... 14° C. Recommended Travel ..... 30° D. Total Travel Available..... 90° Torque (Inch Lbs.) 1 N.O. - 1 N.C. 15
1 N.O. 1 N.C.			

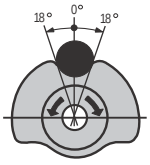
Typical Cams

B1 Single Action



Normally open to make (normally closed to break) IN ONE DIRECTION ONLY. Lever and cam are spring returned to staring position. Used on Single Action Switches only.

B2 Double Action



Normally open to make (normally closed to break) IN EITHER DIRECTION. Lever and cam are spring returned to starting position.

Combination B1/B2 CAM

The following three operating sequences are built into the combination cam used in the standard EA700 switches: B1 Single Action CW, B1 Single Action CCW and B2 Double Action CW & CCW.

1. The contacts function when the lever is operated clockwise. The lever can be operated counterclockwise but the contacts will not operate.
2. The contacts function when the lever is operated counterclockwise. The lever can be operated clockwise but the contacts will not operate.
3. The contacts function when the lever is operated clockwise or counterclockwise.

ORDERING INFORMATION

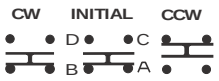
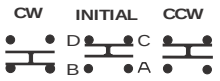
Maintained Switches

M CAM – MAINTAINED CONTACTS & LEVER POSITION

Lever and contacts are maintained in tripped position. When lever is moved CCW the N.C. contacts open and the N.O. contacts close. Starting at this position rotating the lever CW the N.O. contacts open and the N.C. close.

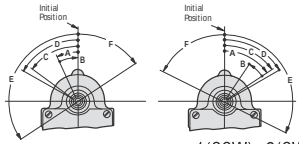
CATALOG NUMBERS

MOUNTING (see page 40)		
STANDARD	Wide	Long
EA700-16000	EA700-46000	EA700-76000

CONTACTS	CIRCUITS	
	POSITION 1	POSITION 2
1 N.O. 1 N.C.		

OPERATIONAL DATA

POSITION 1 CCW POSITION 2 CW



Position	1(CCW)	2(CW)
A. Trip Travel	25°	55°
B. Reset Travel	25°	22°
C. Min. Travel to Maintain	54°	55°
D. Recommended Travel	60°	60°
E. Total Travel	124°	116°
F. Overall Travel	56°	64°

Torque			(inch Lbs.)
M CAM	1 N.O.	CW	6
	1 N.C.	CCW	9

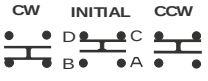
To change Switch Operation from Cam Position 1 to Position 2, Operate Switch thru Angle C. Remove Lever and Reset at Initial Position.

M7 CAM – MAINTAINED CONTACTS – LEVER RETURNED

Contacts are maintained in tripped position, torsion spring will return lever to initial position when released. When lever is moved CCW the N.C. contacts open and the N.O. contacts close. The lever must then be returned to the initial position and be operated in the CW direction to reset the contacts.

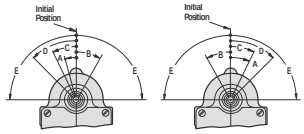
CATALOG NUMBERS

MOUNTING (see page 44)		
STANDARD	Wide	Long
EA700-16700	EA700-46700	EA700-76700

CONTACTS	CIRCUITS	
	POSITION 1	POSITION 2
1 N.O. 1 N.C.		

OPERATIONAL DATA

POSITION 1 CCW POSITION 2 CW



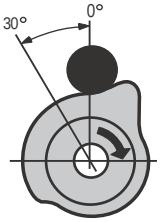
Position	1(CCW)	2(CW)
A. Trip Travel	16°	30°
B. Reset Travel	30°	26°
C. Min. Travel to Maintain	26°	30°
D. Recommended Travel	45°	45°
E. Total Travel	90°	90°

Torque			(inch Lbs.)
M7 CAM	1 N.O.	CW	12
	1 N.C.	CCW	13.5

To change Switch Operation from Cam Position 1 to Position 2, Operate Switch thru Angle B. Remove Lever and Reset at Initial Position.

Maintained Position Cam

The maintained cam is designed for those applications requiring maintained contacts.



Maintained Switches are available with two contact operations:

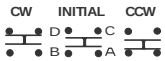
1. When the lever is moved clockwise the normally open contacts close and the normally closed contacts open. The lever is maintained in tripped position. As the lever is activated counterclockwise to starting position, normally open contacts open and normally closed contacts close.
2. When the lever is moved clockwise the normally open contacts close and the normally closed contacts open. This contact arrangement is maintained as the lever is spring returned to the starting position and until the lever is moved counterclockwise when the normally open contacts open and the normally closed contacts close.

Neutral Position Switches

ORDERING INFORMATION

N CAM – NEUTRAL POSITION – ALL CONTACTS OPEN

As lever is moved CW upper contacts close. As lever is spring returned to starting position upper contacts open. As lever is moved CCW from starting position lower contacts close. As lever is spring returned to starting position lower contacts open.

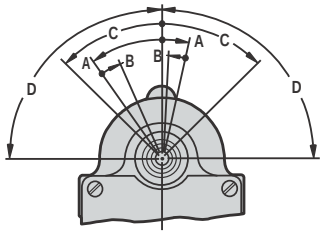
CATALOG NUMBERS		
MOUNTING (see page 40)		
STANDARD	Wide	Long
EA700-15000	EA700-45000	EA700-75000
CONTACTS	CIRCUITS	
2 N.O.		

N CAM – NEUTRAL POSITION – ALL CONTACTS CLOSED

As lever is moved CW lower contacts open. As lever is spring returned to starting position lower contacts close. As lever is moved CCW from starting position upper contacts open. As lever is spring returned to starting position upper contacts close.

CATALOG NUMBERS		
MOUNTING (see page 40)		
STANDARD	Wide	Long
EA700-15100	EA700-45100	EA700-75100
CONTACTS	CIRCUITS	
2 N.C.		

OPERATIONAL DATA

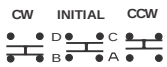


Direction of Rotation		CW	CCW
A. Trip Travel		11°	35°
B. Reset Travel		9°	13°
C. Recommended Travel		45°	45°
D. Total Travel		90°	90°
Torque			(Inch Lbs.)
N CAM	2 N.O.	CW	18
	2 N.O.	CCW	13.5
	4 N.O.	CW	9.5
	4 N.O.	CCW	15
	2 N.C.	CW	8
	2 N.C.	CCW	13.5

**Available in short travel version with 13° trip – Consult Factory.*

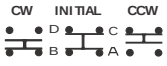
N1 – NEUTRAL POSITION – ALL CONTACTS OPEN

As lever is moved CW lower contacts close. As lever is spring returned to starting position lower contacts open. As lever is moved C W from starting position upper contacts close. As lever is spring returned to starting position upper contacts open

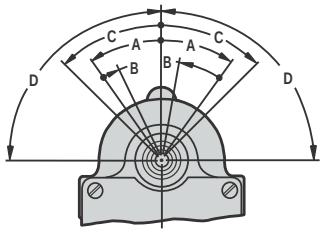
CATALOG NUMBERS		
MOUNTING (see page 40)		
STANDARD	Wide	Long
EA700-15700	EA700-45700	EA700-75700
CONTACTS	CIRCUITS	
2 N.O.		

N1 CAM – NEUTRAL POSITION – ALL CONTACTS CLOSED

As lever is moved CW upper contacts open. As lever is spring returned to starting position upper contacts close. As lever is moved CCW from starting position lower contacts open. As lever is spring returned to starting position lower contacts close.

CATALOG NUMBERS		
MOUNTING (see page 40)		
STANDARD	Wide	Long
EA700-15800	EA700-45800	EA700-75800
CONTACTS	CIRCUITS	
2 N.C.		

OPERATIONAL DATA

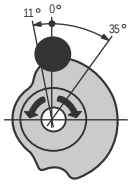


Direction of Rotation		CW	CCW
A. Trip Travel		31°	31°
B. Reset Travel		22°	12°
C. Recommended Travel		45°	45°
D. Total Travel		90°	90°
Torque			(Inch Lbs.)
N1 CAM	2 N.O.	CW	15
	2 N.O.	CCW	19.5
	4 N.O.	CW	16.5
	4 N.O.	CCW	20.5
N1 CAM	2 N.C.	CW	15
	2 N.C.	CCW	19.5
	4 N.C	CW	16.5
	4 N.C.	CCW	20.5

Neutral Position Cam

The neutral position cam is designed for applications requiring a neutral position in the contact arrangement. Both the operating lever and the cam are spring returned to starting position. The maximum lever travel in either direction is 90˚.

See Page 40 for Mounting Dimensions



This is the contact action of neutral switches:

- As the lever is moved clockwise the lower contact transfers. As the lever is spring returned to starting position the lower contact is returned to its original position.
- As the lever is moved counterclockwise from starting position the upper contact transfers. As the lever is spring returned to starting position the upper contact returns.

Specifications

2 N.O. - 2 N.C.

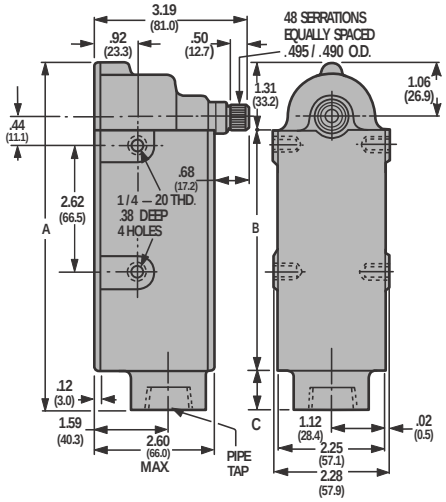
1. Enclosure is water, oil and dust tight.
2. Enclosure meets NEMA Type 1, 4 and 13 requirements.
3. Contacts made of silver alloy. Contact shifting mechanism is locked in position by the latches until switch lever is actuated.
4. Standard Temperature Range: -20˚C to +90˚C
5. Operating lever is adjustable to any required position.
6. Operating Lever Angles (travel either clockwise or counterclockwise) maximum degrees of trip travel, reset travel, as well as total lever travel, are determined by the cam selected.
7. Operating Torques - Trip Torque varies from 15 to 33 in. lbs. depending on switch size and cam selected.
8. Current Ratings:

Voltage		For Neutral Position Only
125V-A.C.	20.0 Amps*	10.0 Amps*
250V-A.C.	15.0 Amps*	7.5 Amps*
480V-A.C.	10.0 Amps*	5.0 Amps*
600V-A.C.	5.0 Amps*	2.5 Amps*
125V-D.C.	5.0 Amps*	2.5 Amps*
250V-D.C.	1.5 Amps*	.75 Amps*

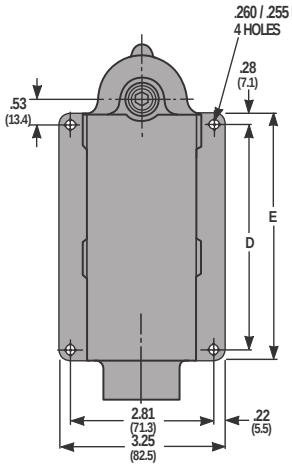
*75-100% Power Factor

Dimensions and Mounting

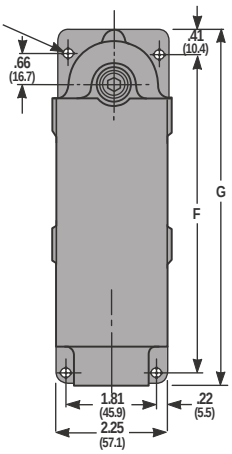
Series EA700 Snap-Lock Limit Switches are specifically designed for flexibility in mounting arrangements. Basic design permits mounting for either side or back. Shown here are the (1) STANDARD for side mounting; (2) WIDE for back mounting; (3) LONG for back mounting.



Standard Mounting



Wide Mounting



Long Mounting

All dimensions given in US & Metric: Inches (mm)

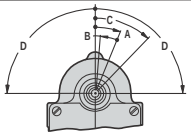
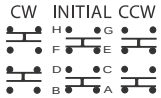
CONTACT SEQUENCE	STANDARD SWITCH				MOUNTING STYLE			
	PIPE TAP SIZE	A	B	C	WIDE		LONG	
					D	E	F	G
2 N.O. - 2 N.C.	1-11 1/2 NPT	7.06	4.94	0.81	4.38	4.94	6.41	7.06

Standard Switches

ORDERING INFORMATION

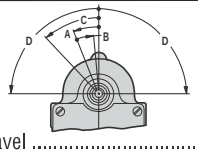
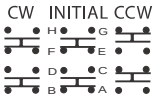
CW OPERATION ONLY (Combination B-1/B-2 Cam)

Contacts transfer when lever is operated CW. Lever can be operated CCW but contacts will not transfer.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	Wide	Long	
EA700-20000	EA700-50000	EA700-80000	
CONTACTS	CIRCUITS		A. Trip Travel ..... 18°
2 N.O. 2 N.C.			B. Reset Travel ..... 14° C. Recommended Travel ..... 30° D. Total Travel Available..... 90° Torque (Inch Lbs.) 2 N.O. - 2 N.C. 27

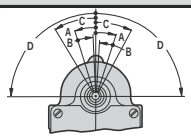
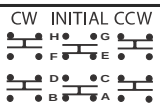
CCW OPERATION ONLY (Combination B-1/B-2 Cam)

Contacts transfer when lever is operated CCW. Lever can be operated CW but contacts will not transfer.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	Wide	Long	
EA700-20001	EA700-50001	EA700-80001	
CONTACTS	CIRCUITS		A. Trip Travel ..... 18°
2 N.O. 2 N.C.			B. Reset Travel ..... 14° C. Recommended Travel ..... 30° D. Total Travel Available..... 90° Torque (Inch Lbs.) 2 N.O. - 2 N.C. 27

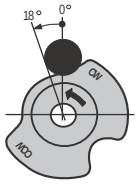
CW & CCW OPERATION (Combination B-1/B-2 Cam)

Contacts transfer when lever is operated CW or CCW.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	Wide	Long	
EA700-20100	EA700-50100	EA700-80100	
CONTACTS	CIRCUITS		A. Trip Travel ..... 18°
2 N.O. 2 N.C.			B. Reset Travel ..... 14° C. Recommended Travel ..... 30° D. Total Travel Available..... 90° Torque (Inch Lbs.) 2 N.O. - 2 N.C. 27

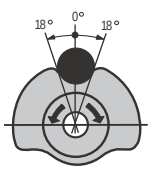
Typical Cams

B1 Single Action



Normally open to make (normally closed to break) IN ONE DIRECTION ONLY. Lever and cam are spring returned to staring position. Used on Single Action Switches only.

B2 Double Action



Normally open to make (normally closed to break) IN EITHER DIRECTION. Lever and cam are spring returned to starting position.

Combination B1/B2 CAM

The following three operating sequences are built into the combination cam used in the standard EA700 switches: B1 Single Action CW, B1 Single Action CCW and B2 Double Action CW & CCW.

1. The contacts function when the lever is operated clockwise. The lever can be operated counterclockwise but the contacts will not operate.
2. The contacts function when the lever is operated counterclockwise. The lever can be operated clockwise but the contacts will not operate.
3. The contacts function when the lever is operated clockwise or counterclockwise.

ORDERING INFORMATION

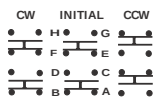
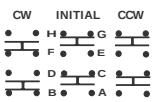
Maintained Switches

M CAM – MAINTAINED CONTACTS & LEVER POSITION

Lever and contacts are maintained in tripped position. When lever is moved CCW the N.C. contacts open and the N.O. contacts close. Starting at this position rotating the lever CW the N.O. contacts open and the N.C. close.

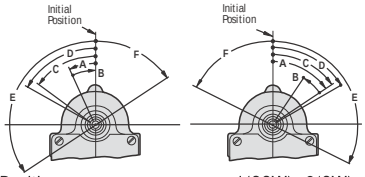
CATALOG NUMBERS

MOUNTING (see page 44)		
STANDARD	Wide	Long
EA700-26000	EA700-56000	EA700-86000

CONTACTS	CIRCUITS	
	POSITION 1	POSITION 2
2 N.O. 2 N.C.		

OPERATIONAL DATA

POSITION 1 CCW POSITION 2 CW



Position	1(CCW)	2(CW)
A. Trip Travel	25°	55°
B. Reset Travel	25°	22°
C. Min. Travel to Maintain	54°	55°
D. Recommended Travel	60°	60°
E. Total Travel	124°	116°
F. Overall Travel	56°	64°

Torque (inch Lbs.)

M CAM	1 N.O.	CW	6
	1 N.C.	CCW	9

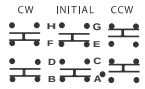
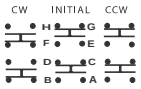
To change Switch Operation from Cam Position 1 to Position 2, Operate Switch thru Angle C. Remove Lever and Reset at Initial Position.

M7 CAM – MAINTAINED CONTACTS – LEVER RETURNED

Contacts are maintained in tripped position, torsion spring will return lever to initial position when released. When lever is moved CCW the N.C. contacts open and the N.O. contacts close. The lever must then be returned to the initial position and be operated in the CW direction to reset the contacts.

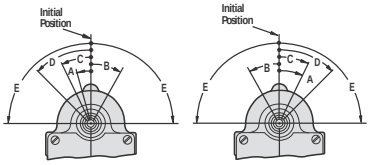
CATALOG NUMBERS

MOUNTING (see page 44)		
STANDARD	Wide	Long
EA700-26700	EA700-56700	EA700-86700

CONTACTS	CIRCUITS	
	POSITION 1	POSITION 2
2 N.O. 2 N.C.		

OPERATIONAL DATA

POSITION 1 CCW POSITION 2 CW



Position	1(CCW)	2(CW)
A. Trip Travel	16°	30°
B. Reset Travel	30°	26°
C. Min. Travel to Maintain	26°	30°
D. Recommended Travel	45°	45°
E. Total Travel	90°	90°

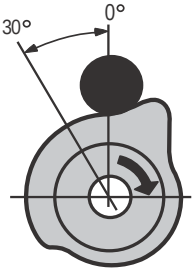
Torque (inch Lbs.)

M7 CAM	1 N.O.	CW	12
	1 N.C.	CCW	13.5

To change Switch Operation from Cam Position 1 to Position 2, Operate Switch thru Angle B. Remove Lever and Reset at Initial Position.

Maintained Position Cam

The maintained cam is designed for those applications requiring maintained contacts.



Maintained Switches are available with two contact operations:

1. When the lever is moved clockwise the normally open contacts close and the normally closed contacts open. The lever is maintained in tripped position. As the lever is activated counterclockwise to starting position, normally open contacts open and normally closed contacts close.
2. When the lever is moved clockwise the normally open contacts close and the normally closed contacts open. This contact arrangement is maintained as the lever is spring returned to the starting position and until the lever is moved counterclockwise when the normally open contacts open and the normally closed contacts close.

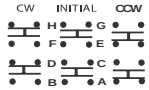
Neutral Position Switches

ORDERING INFORMATION

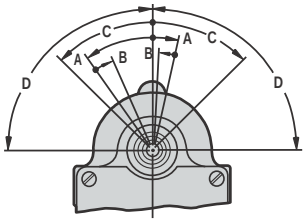
N CAM – NEUTRAL POSITION – All CONTACTS OPEN

As lever is moved CW upper contacts close. As lever is spring returned to starting position upper contacts open. As lever is moved CCW from starting position lower contacts close. As lever is spring returned to starting position lower contacts open.

CATALOG NUMBERS

MOUNTING (see page 44)		
STANDARD	Wide	Long
EA700-25000	EA700-55000	EA700-85000
CONTACTS	**CIRCUITS**	
4 N.O.		

OPERATIONAL DATA

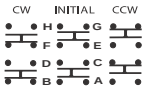


Direction of Rotation		CW	CCW
A. Trip Travel		11°	35°
B. Reset Travel		9°	13°
C. Recommended Travel		45°	45°
D. Total Travel		90°	90°
Torque			(Inch Lbs.)
N CAM	2 N.O.	CW	18
	2 N.O.	CCW	13.5
	4 N.O.	CW	9.5
	4 N.O.	CCW	15
	2 N.C.	CW	18
	2 N.C.	CCW	13.5

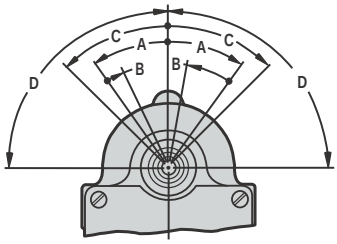
N1 – NEUTRAL POSITION – All CONTACTS OPEN

As lever is moved CW lower contacts close. As lever is spring returned to starting position lower contacts open. As lever is moved CCW from starting position upper contacts close. As lever is spring returned to starting position upper contacts open.

CATALOG NUMBERS

MOUNTING (see page 44)		
STANDARD	Wide	Long
EA700-25102	EA700-55102	EA700-85102
CONTACTS	**CIRCUITS**	
4 N.O.		

OPERATIONAL DATA

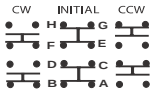


Direction of Rotation		CW	CCW
A. Trip Travel		31°	31°
B. Reset Travel		22°	12°
C. Recommended Travel		45°	45°
D. Total Travel		90°	90°
Torque			(Inch Lbs.)
N1 CAM	2 N.O.	CW	15
	2 N.O.	CCW	19.5
	4 N.O.	CW	16.5
	4 N.O.	CCW	20.5
N1 CAM	2 N.C.	CW	15
	2 N.C.	CCW	19.5
	4 N.C	CW	16.5
	4 N.C.	CCW	20.5

N1 CAM – NEUTRAL POSITION – All CONTACTS CLOSED

As lever is moved CW upper contacts open. As lever is spring returned to starting position upper contacts close. As lever is moved CCW from starting position lower contacts open. As lever is spring returned to starting position lower contacts close.

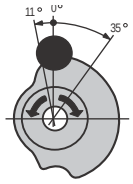
CATALOG NUMBERS

MOUNTING (see page 44)		
STANDARD	Wide	Long
EA700-25108	EA700-55108	EA700-85108
CONTACTS	**CIRCUITS**	
4 N.C.		

Neutral Position Cam

The neutral position cam is designed for applications requiring a neutral position in the contact arrangement. Both the operating lever and the cam are spring returned to starting position. The maximum lever travel in either direction is 90˚.

See Page 44 for Mounting Dimensions



This is the contact action of neutral switches:

- As the lever is moved clockwise the lower contact transfers. As the lever is spring returned to starting position the lower contact is returned to its original position.
- As the lever is moved counterclockwise from starting position the upper contact transfers. As the lever is spring returned to starting position the upper contact returns.

Specifications

3 N.O. - 3 N.C.

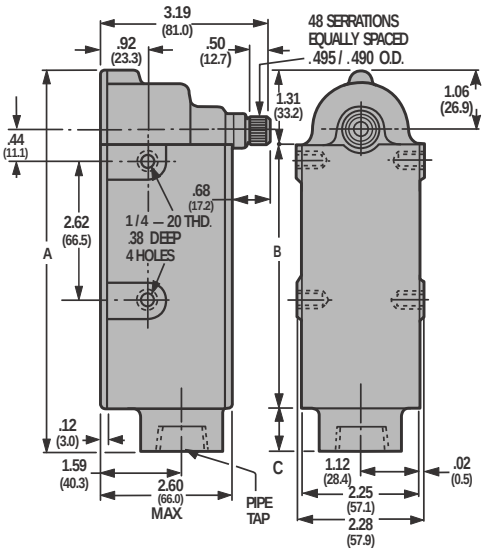
1. Enclosure is water, oil and dust tight.
2. Enclosure meets NEMA Type 1, 4 and 13 requirements.
3. Contacts made of silver alloy. Contact shifting mechanism is locked in position by the latches until switch lever is actuated.
4. Standard Temperature Range: -20˚C to +90˚C
5. Operating lever is adjustable to any required position.
6. Operating Lever Angles (travel either clockwise or counterclockwise) maximum degrees of trip travel, reset travel, as well as total lever travel, are determined by the cam selected.
7. Operating Torques - Trip Torque varies from 15 to 33 in. lbs. depending on switch size and cam selected.
8. Current Ratings:

Voltage		For Neutral Position Only
125V-A.C.	20.0 Amps*	10.0 Amps*
250V-A.C.	15.0 Amps*	7.5 Amps*
480V-A.C.	10.0 Amps*	5.0 Amps*
600V-A.C.	5.0 Amps*	2.5 Amps*
125V-D.C.	5.0 Amps*	2.5 Amps*
250V-D.C.	1.5 Amps*	.75 Amps*

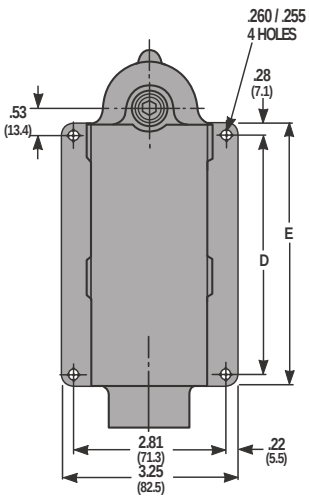
*75-100% Power Factor

Dimensions and Mounting

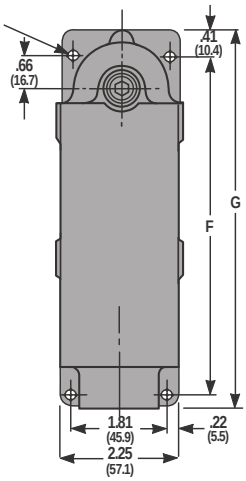
Series EA700 Snap-Lock Limit Switches are specifically designed for flexibility in mounting arrangements. Basic design permits mounting for either side or back. Shown here are the (1) STANDARD for side mounting; (2) WIDE for back mounting; (3) LONG for back mounting.



Standard Mounting



Wide Mounting



Long Mounting

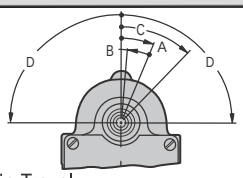
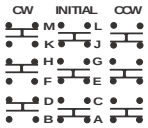
All dimensions given in US & Metric: Inches (mm)

CONTACT SEQUENCE	STANDARD SWITCH				MOUNTING STYLE			
	PIPE TAP SIZE	A	B	C	WIDE		LONG	
					D	E	F	G
3 N.O. - 3 N.C.	1-11 1/2 NPT	9.62	7.5	0.81	6.94	7.5	8.97	9.62

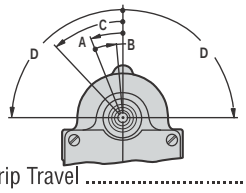
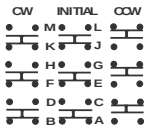
Standard Switches

ORDERING INFORMATION

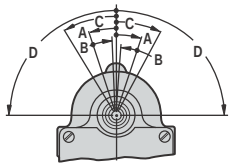
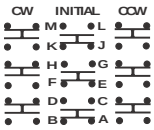
CW OPERATION ONLY (Combination B-1/B-2 Cam)
Contacts transfer when lever is operated CW. Lever can be operated CCW but contacts will not transfer.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	Wide	Long	
EA700-30000	EA700-60000	EA700-90000	
	CIRCUITS		
CONTACTS			A. Trip Travel .....18 B. Reset Travel .....14 C. Recommendation Travel.....30 D. Total Travel Available .....90 Torque (inch Lbs.) 3 N.O. - 3 N.C. ...33
3 N.O. 3 N.C.			

CCW OPERATION ONLY (Combination B-1/B-2 Cam)
Contacts transfer when lever is operated CCW. Lever can be operated CW but contacts will not transfer.

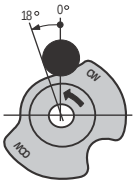
CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	Wide	Long	
EA700-30001	EA700-60001	EA700-90001	
	CIRCUITS		
CONTACTS			A. Trip Travel .....18 B. Reset Travel .....14 C. Recommendation Travel.....30 D. Total Travel Available .....90 Torque (inch Lbs.) 3 N.O. - 3 N.C. ...33
3 N.O. 3 N.C.			

CW & CCW OPERATION ONLY (Combination B-1/B-2 Cam)
Contacts transfer when lever is operated CW or CCW.

CATALOG NUMBERS			OPERATIONAL DATA
MOUNTING (see opposite page)			
STANDARD	Wide	Long	
EA700-30100	EA700-60100	EA700-90100	
	CIRCUITS		
CONTACTS			A. Trip Travel .....18 B. Reset Travel .....14 C. Recommendation Travel.....30 D. Total Travel Available .....90 Torque (inch Lbs.) 3 N.O. - 3 N.C. ...33
3 N.O. 3 N.C.			

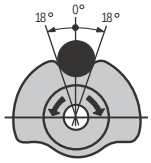
Typical Cams

B1 Single Action



Normally open to make (normally closed to break) IN ONE DIRECTION ONLY. Lever and cam are spring returned to staring position. Used on Single Action Switches only.

B2 Double Action



Normally open to make (normally closed to break) IN EITHER DIRECTION. Lever and cam are spring returned to starting position.

Combination B1/B2 CAM
The following three operating sequences are built into the combination cam used in the standard EA700 switches: B1 Single Action CW, B1 Single Action CCW and B2 Double Action CW & CCW.

1. The contacts function when the lever is operated clockwise. The lever can be operated counterclockwise but the contacts will not operate.
2. The contacts function when the lever is operated counterclockwise. The lever can be operated clockwise but the contacts will not operate.
3. The contacts function when the lever is operated clockwise or counterclockwise.