

# XMCO Series

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## DEFINITE PURPOSE CONTACTORS

### DESCRIPTION

Zettler's XMCO series of Definite Purpose Contactors are electro-mechanical switching devices designed ideally for the HVAC industry. The most common applications of our contactors are found in refrigeration, air conditioning and heating. Other applications include elevators, food service equipment, cranes, hoists, welding machines, power supplies, vending machines, lighting, pumps and compressors.

XMCO is available in various pole configurations up to 90 amps and now with the option to that comply with the A2L refrigerant requirements of Appendix JJ of UL 60335-2-40.



### FEATURES

- A variety of termination options for specific application requirements
- Universal mounting plate: Easy replacement of competitor's contactors
- Heavy-duty contacts ensure long electrical life
- EE lamination (magnetic assembly) provides optimum performance while reducing power consumption
- Performance unaffected by position mounting
- Dust-free internal construction
- SCCR (short circuit current rating) 100kA, 600VAC
- Class F Coil Insulation
- Offer complete line of auxiliary contacts and micro switches
- Mechanical Interlock device offered - 2P, 2P/3P, 3P, and 4P
- UL, CUR file no. E222994
- Meets ARI 780/790 and IEC/UL 60947-4-1
- UL LZGH2/8 certified for use with A2L refrigerant version available.

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## AMERICAN ZETTLER, INC.

# XMCO Series

## PART NUMBERING SYSTEM

**XMCO - 25 2 • E B B C - H 0 0 F G Z W - XXXX**

Full Load Amp \_\_\_\_\_

25	25 FLA
32	32 FLA
40	40 FLA
50	50 FLA
63	63 FLA
75	75 FLA
90	90 FLA

Number of Poles \_\_\_\_\_

7	1 Pole - Compact (25-40 FLA only)
1	1 Pole + 1 Shunt - Compact (25-40A)
2	2 Pole - Compact (25-40 FLA only)
3	3 Pole - Standard
3A	2 Pole - Standard 3 Pole Frame
4	4 Pole - Standard (25-40 FLA only)

Coil Voltage \_\_\_\_\_

	50Hz	60Hz
E	24 VAC	24 VAC
F	110-120 VAC	110-120 VAC
I	208-220/240 VAC	208-240 VAC
L	230-240 VAC	277 VAC
N	380-415 VAC	440-480 VAC
*U	550-600 VAC	550-600 VAC
*P	12 VDC (Compact frame only)	
*Q	24 VDC (Compact frame only)	
*R	36 VDC (Compact frame only)	

\*Not available in 50A or greater models.

Frame (Body) Type \_\_\_\_\_

Nil	Standard thermoset frame with removable cover and mounting plate
BB	Compact thermo plastic frame (Unavailable with 3/4 pole or 50-90A models)

Power Terminals \_\_\_\_\_

C	Slotted & Hex Head Washer
D	Box Lugs with quick connects
E	Box Lug w/ quick connect (Line) Slotted & Hex Head Washer (Load)
F	Slotted & Hex Head Washer (Line) Box Lug w/ quick connect (Load)

Contact Material

Nil	AgSnO <sub>2</sub>
H	AgCdO

\*Contact factory for availability of AgCdO

Custom Special Code

Refrigerant Safety

Nil	Non-A2L
W	UL LZGH2/8 certified for use with A2L Refrigerants.

Contact Construction

Nil	Flat construction
Z	Bend construction (50-63 FLA only) (no "break all lines" restriction)

Quick Connect (Power) Terminals

Nil	1/2 Poles: Quad QC Terminals 3/4 Pole: Dual QC Terminals
G	Without Any QC Terminals
Q	3/4 Pole: Quad QC Terminals (on opposite of coil terminals)

Coil Terminals

Nil	1 & 2 Pole: Dual Terminals w/o screws 3/4 Pole: Single Terminal w/ screw
F	3/4 Pole: Dual Terminals w/ screws

Auxiliary Contacts & Microswitch

Right Side

Left Side

AUXILIARY CONTACTS (3/4P ONLY)

0	None (Standard)
1	1NC+1NO, pressure plate screws w/ QC
3	1NC, pressure plate screws w/ QC
4	1NO, pressure plate screws w/ QC
5	2NC, pressure plate screws w/ QC
6	2NO, pressure plate screws w/ QC
1P	1NC+1NO, pressure plate screws
3P	1NC, pressure plate screws
4P	1NO, pressure plate screws
5P	2NC, pressure plate screws
6P	2NO, pressure plate screws

MICROSWITCH (3/4P ONLY)

L	Left 2 SPDT
L1	Left SPDT Postion 1
L2	Left SPDT Postion 2
R	Right 2 SPDT
R1	Right SPDT Postion 1
R2	Right SPDT Postion 2

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## DEFINITE PURPOSE CONTACTORS

### GENERAL DATA

Rated insulation voltage	690 Vrms
Dielectric strength	2500Vrms (coil to contact & contact to contact)
Designs/conforms to	IEC 60947-4-1, GB14048.4, EN60947-4, ARI780 / 790
Agency approvals	UL, CUR
Operating position	Vertical and Horizontal mounting recommended
Operating altitude	2000 meters without derating
Ambient temperature	<b>Operating:</b> -25°C to 70°C *
	<b>Storage</b> -40°C to 70°C
Shock resistance (1/2 ~ wave) = 11ms	Contact Open: 6g ; Contact Closed: 15g
Vibration resistance (5-300Hz)	Contact Open: 2g ; Contact Closed: 4g
Weight	20-40A: 230-420g, 50/63A: 650g, 75/90A: 1550g
Torque	Screws: 25 lb-in , Lugs: 25 or 40 lb-in for 25-40FLA types
	Screws: 45 lb-in , Lugs: 50 lb-in for 50-63FLA types
	Screws: 50 lb-in , Lugs: 60 lb-in for 75-90FLA types
	Screws: 8 lb-in for Auxiliary Contact Blocks
	Coil Screws: 8 lb-in for 3/4-pole 30-40FLA and 12 lb-in for 50-90FLA types
QC Wiring	Main Screws: 12 lb-in/Auxiliary Screws 8 lb-in
	Coil Screws: 8 lb-in for small frame types
QC Wiring	The female connector should meet IEC 60760, necessary to ensure the reliability of connection between female connectors and QC terminals

\* The overall combined temperature must not exceed the coil insulation max temperature of 155C.

### ELECTRICAL

Rated Operating Voltage	12-600VAC max
Make Capacity (230V, cos Ø=0.45)	12 x FLA
Break Capacity (230V, cos Ø=0.45)	10 x FLA
Switching Frequency	360 operations/hour
Electrical Endurance	Up to 250,000
Mechanical Endurance	1,000,000
SCCR (UL508)	100kA, 600VAC

### AUXILIARY CONTACT BLOCK DATA

Conventional Thermal Current (A)		10
Rated Insulation Voltage (V)		690
Rated Operational Current (A)	A600 (AC-15) 230/380V	3/1.9
	N600(DC-13) 110/230V	2.2/1.1

### MICROSWITCH BLOCK DATA

Max. Rating	22A at 250 VAC. General use, 6K cycles
Contact Ratings	10A or 11A, 1/3 HP, 125 or 250 VAC 1/2A, 125 VDC; 1/4A, 250 VDC 4A 120 VAC on Lamp Load

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### ELECTRICAL RATINGS

Size	Full Load Amps (FLA)	Resistive Load Amps (RLA)	Locked Rotor Amps (LRA)			Pole Form	Order Number
			240VAC	480VAC	600VAC		
Compact	25	32	150	125	100	1P	XMCO-257
						1P+1shunt	XMCO-251
						2P	XMCO-252
	32	40	180	150	120	1P	XMCO-327
						1P+1shunt	XMCO-321
						2P	XMCO-322
	40	50	240	200	160	1P	XMCO-407
						1P+1shunt	XMCO-401
						2P	XMCO-402
Standard	25	32	150	125	100	2P	XMCO-253A
						3P	XMCO-253
						4P	XMCO-254
	32	40	180	150	120	2P	XMCO-323A
						3P	XMCO-323
						4P	XMCO-324
	40	50	240	200	160	2P	XMCO-403A
						3P	XMCO-403
						4P	XMCO-404
	50	63	300	250	200	2/3P	XMCO-502/3
	63	75	360	300	240	2/3P	XMCO-632/3
	75	94	450	375	300	2/3P	XMCO-752/3
90	120	540	450	360	2/3P	XMCO-902/3	

### DC COIL DATA

Voltage (Us*)	Coil Res. (Ω)	Pickup Voltage	Drop Out Voltage	Max Sealed Watts
12	29	≤ 0.8 Us*	≥ 0.1 Us*	6
24	120			
36	250			

### AC COIL DATA

Pole Form	Inrush VA		Sealed VA		Sealed (W)	Pickup Voltage	Dropout Voltage
	50Hz	60Hz	50Hz	60Hz			
1 pole, 1 pole + 1 shunt	55	40	10	7.5	3.5	≤ 0.8 Us*	≥ 0.2 Us*
2 pole	55	45	10.5	8	4		
3 pole, 2 pole standard (3A)	90	80	16	12	5		
3 pole -503 & 633	160	145	23	18	7		
3 pole -753 & 903	325	300	46	35	12		
4 pole	100	90	18	14	6		

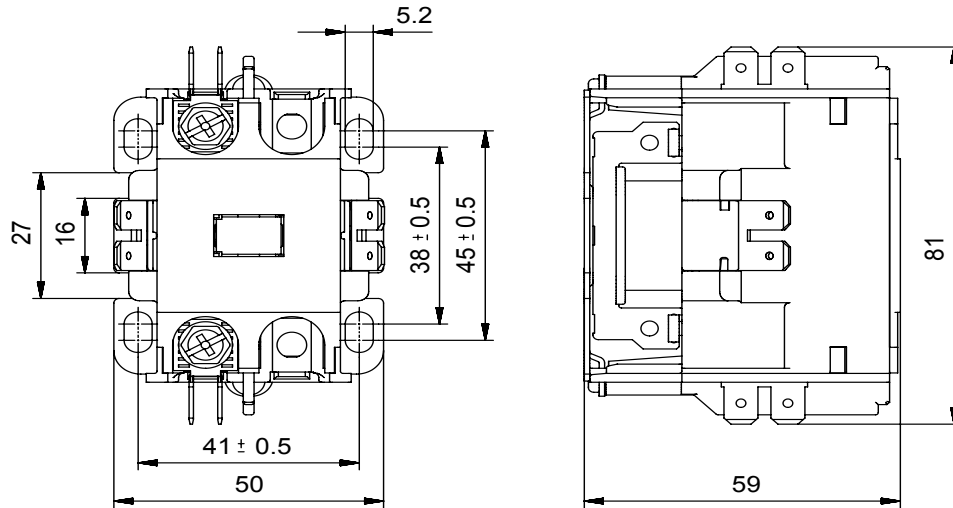
\*Us = nominal coil voltage. VA data at nominal coil voltage, ambient temperature 25C.

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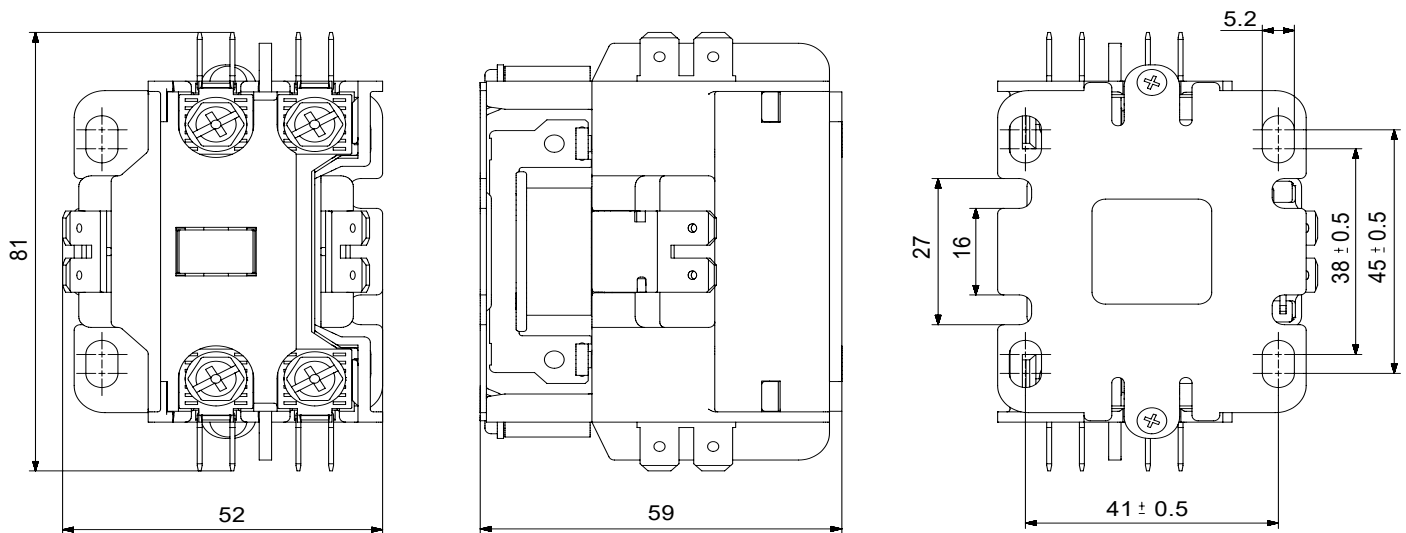
# XMCO Series

## DEFINITE PURPOSE CONTACTORS

### DIMENSIONS



1 Pole Contactor (Compact thermo plastic, 25-40FLA)

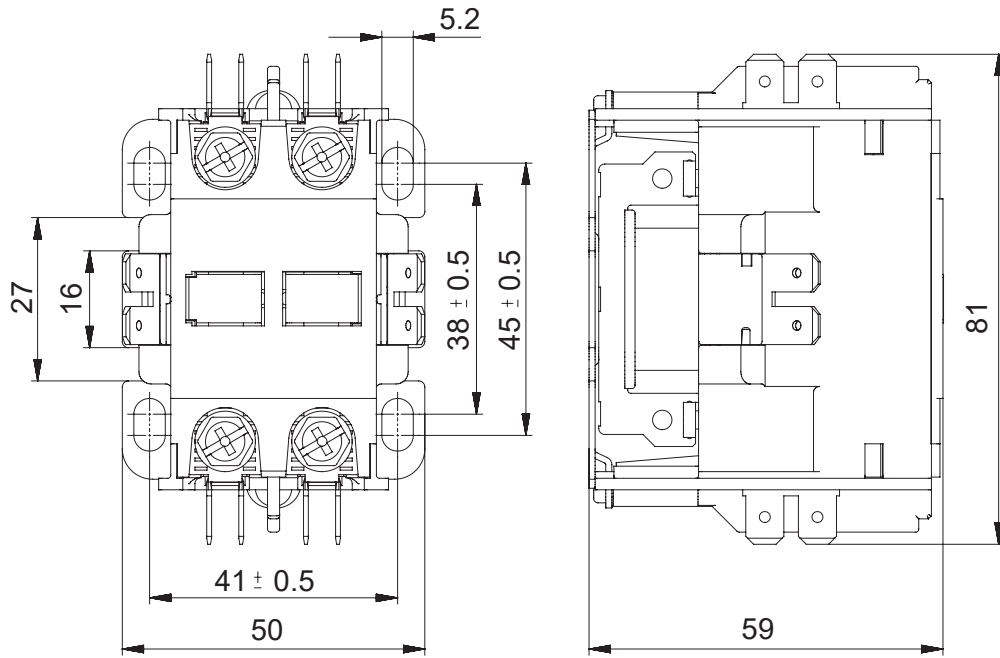


1 Pole + Shunt Contactor (Compact thermo plastic, 25-40FLA)

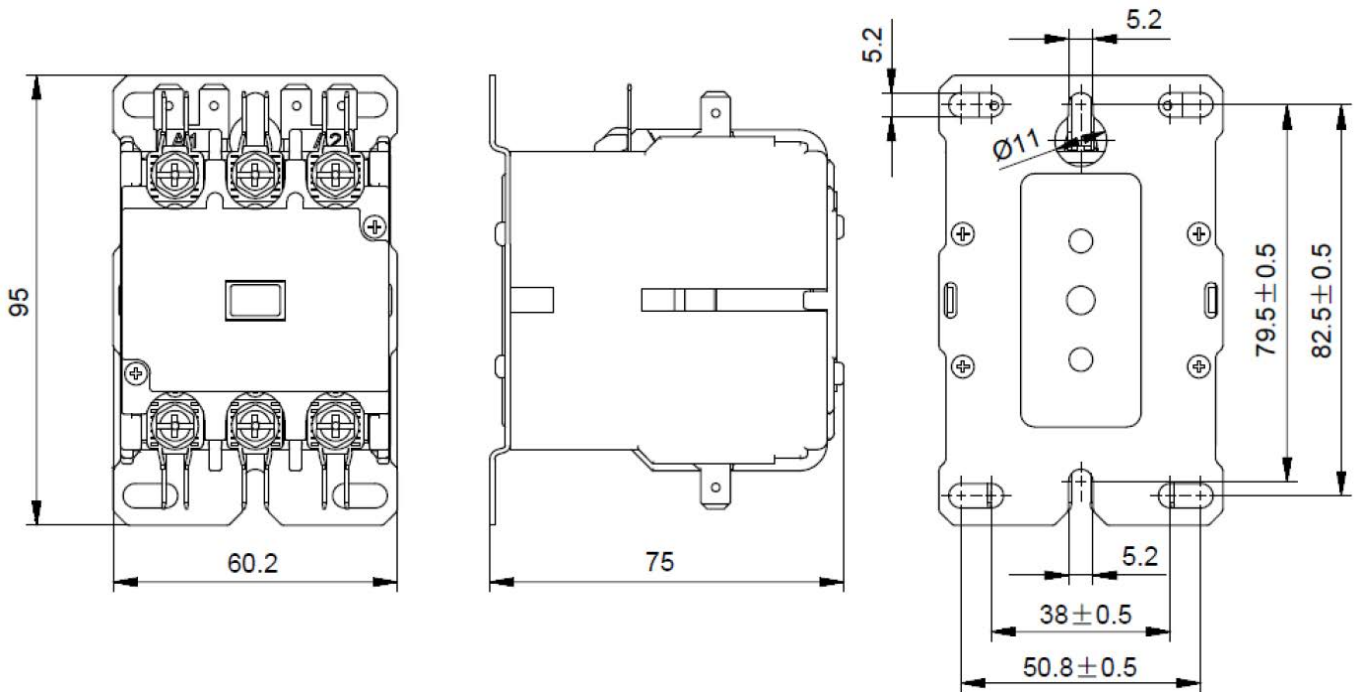
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# XMCO Series

## DEFINITE PURPOSE CONTACTORS



2 Pole Contactor (Compact thermo plastic, 25-40FLA)

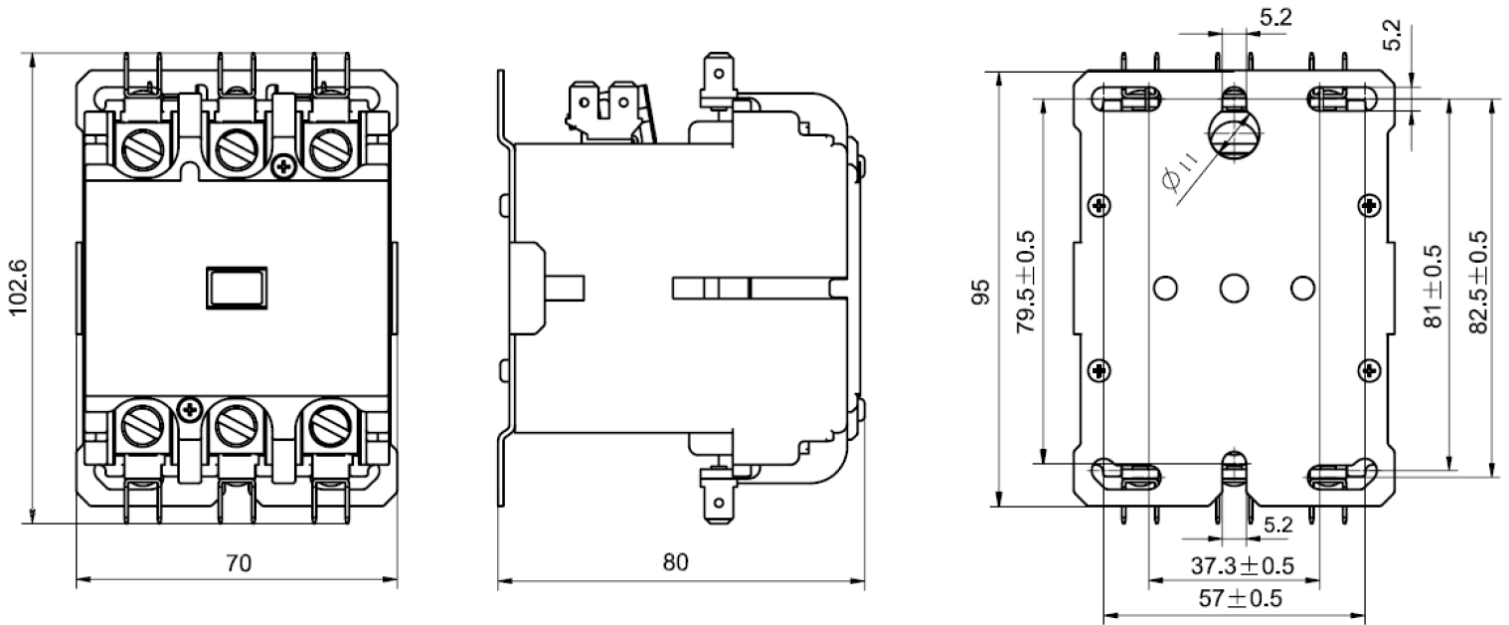


3 Pole Contactor (Standard Thermoset, 25-40FLA)

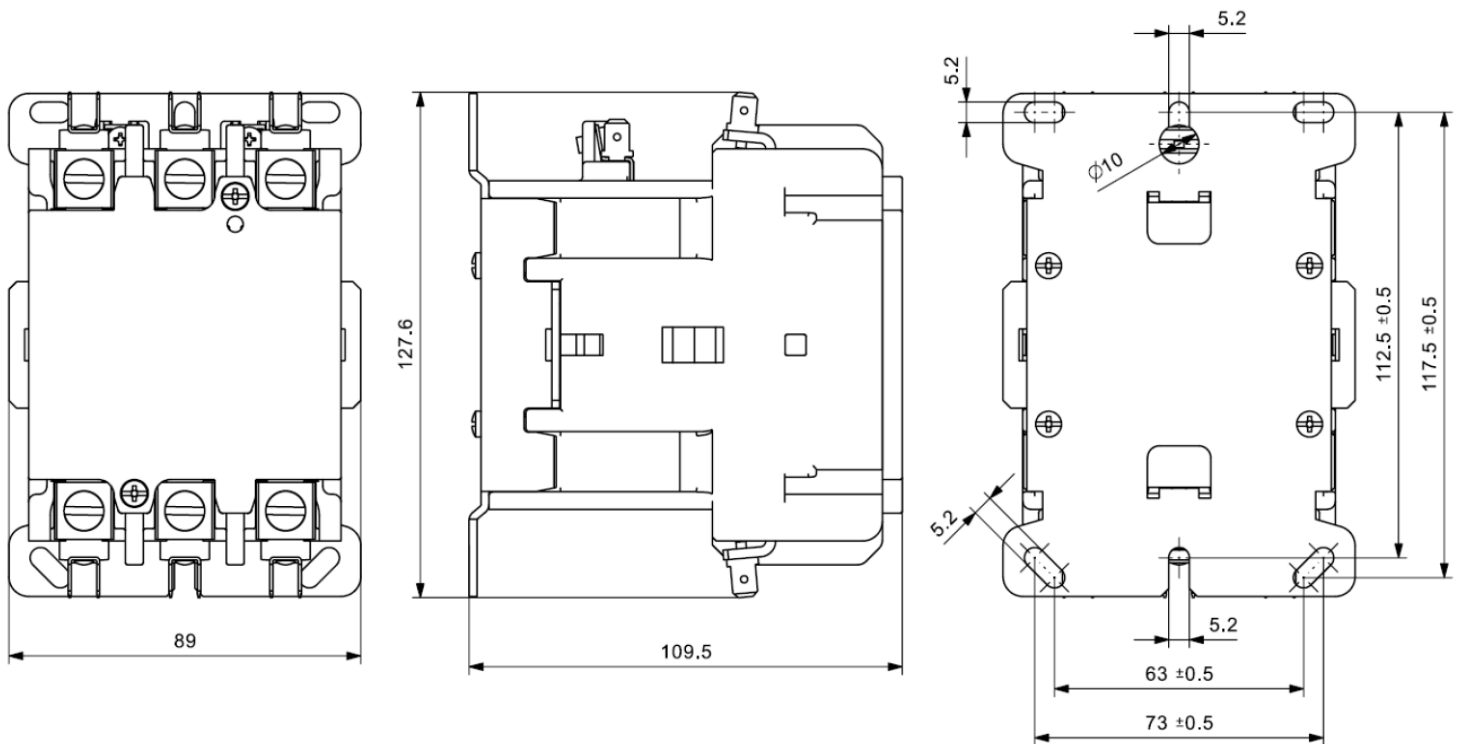
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# XMCO Series

## DEFINITE PURPOSE CONTACTORS



3 Pole Contactor (Standard Thermoset, 50-63FLA)

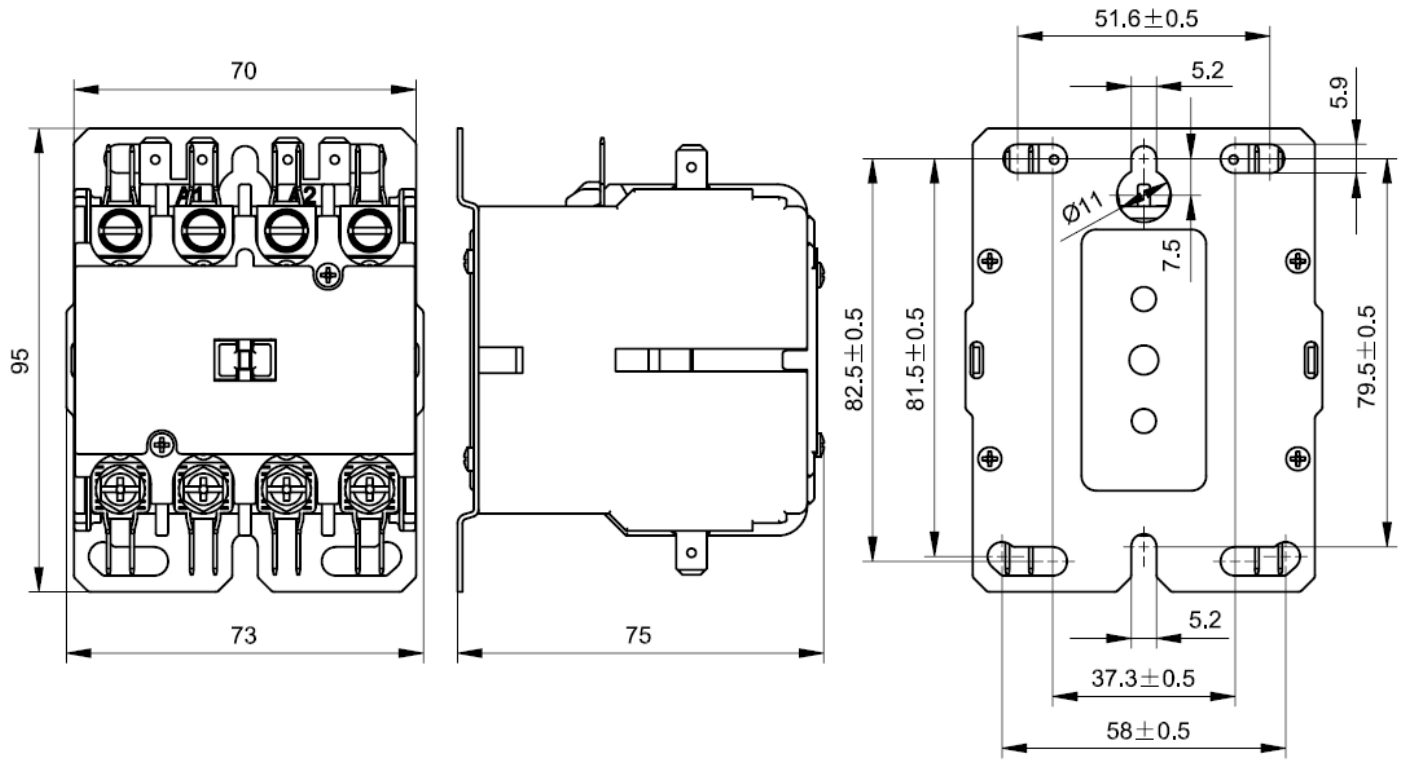


3 Pole Contactor (Standard Thermoset, 75-90FLA)

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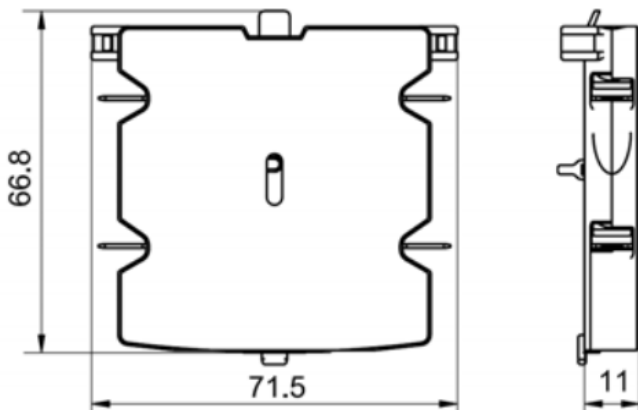
# XMCO Series

## DEFINITE PURPOSE CONTACTORS

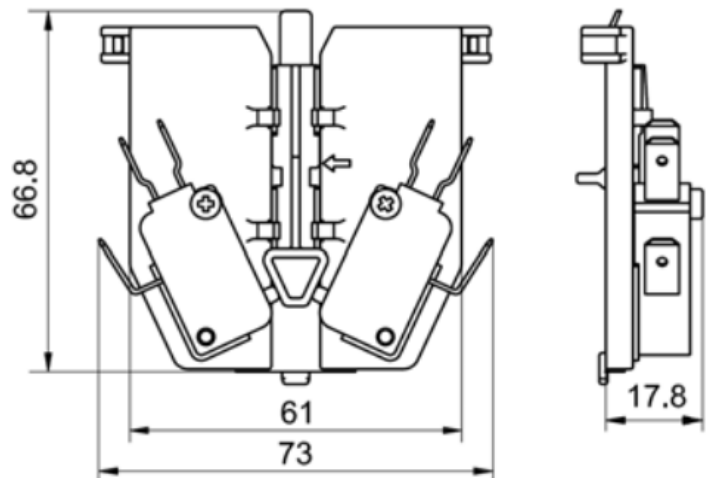


4 Pole Contactor (Standard Thermoset, 25-40FLA)

## AUXILIARY CONTACT



## MICROSWITCH



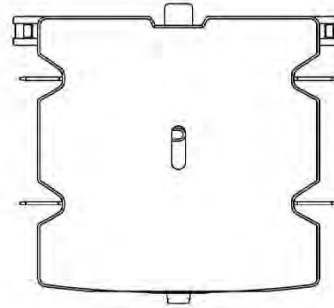
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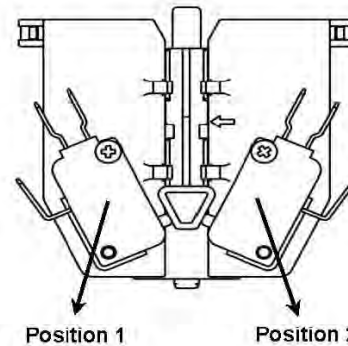
## Auxiliary Contact Blocks: C03 A 11 P Q X

<b>Basic Designation</b> C03 = For XMCO Definite Purpose Contactors.
<b>Accessory Category</b> A = Auxiliary Contacts Block
<b>Contact Type</b> 01 = 1NC    10 = 1NO    11 = 1NC + 1NO    02 = 2NC    20 = 2NO <b>Note:</b> NC = Normally Closed, NO = Normally Opened.
<b>Quick Connect Terminals</b> Blank = 0.250" quick connect terminals P = Pressure plate screw (None QC terminals)
<b>Used Function</b> Q = Standard thermoset frames    Blank = Legacy thermo plastic frames
<b>Option</b> Customer assigned suffix "X" where "X" may be any alphanumeric character or any combined alphanumeric character.



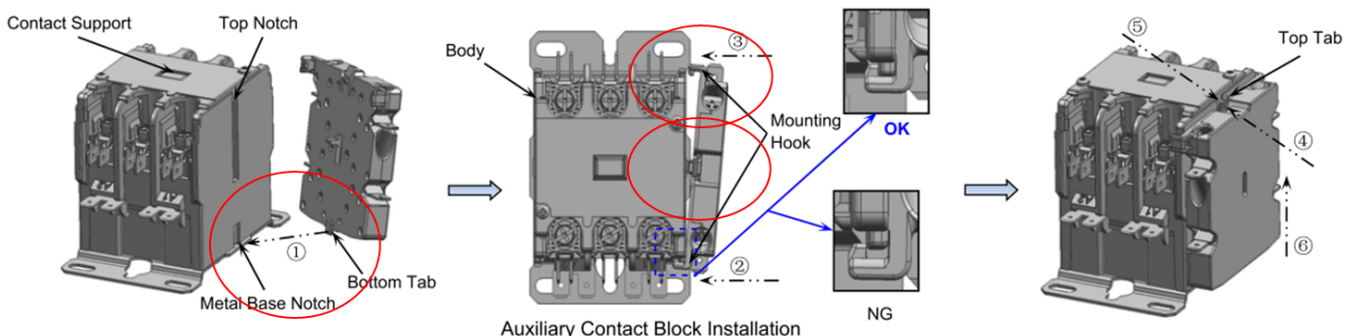
## Microswitch Blocks: C03 M 10 Q X

<b>Basic Designation</b> C03 = For XMCO Definite Purpose Contactors.						
<b>Accessory Category</b> M = Microswitch Block						
<b>Contact Type</b> <table border="1"> <tr> <td>Microswitch at Left side (position 1) for Microswitch Assembly</td> <td>Microswitch at Right side (position 2) for Microswitch Assembly</td> </tr> <tr> <td>0 = None    3 = 1 SPST-NC</td> <td>0 = None    3 = 1 SPST-NC</td> </tr> <tr> <td>1 = 1 SPDT    4 = 1 SPST-NO</td> <td>1 = 1 SPDT    4 = 1 SPST-NO</td> </tr> </table> <b>Note:</b> SPDT = Single Pole Double Throw, SPST = Single Pole Single Throw, NC = Normally Closed, NO = Normally Opened.	Microswitch at Left side (position 1) for Microswitch Assembly	Microswitch at Right side (position 2) for Microswitch Assembly	0 = None    3 = 1 SPST-NC	0 = None    3 = 1 SPST-NC	1 = 1 SPDT    4 = 1 SPST-NO	1 = 1 SPDT    4 = 1 SPST-NO
Microswitch at Left side (position 1) for Microswitch Assembly	Microswitch at Right side (position 2) for Microswitch Assembly					
0 = None    3 = 1 SPST-NC	0 = None    3 = 1 SPST-NC					
1 = 1 SPDT    4 = 1 SPST-NO	1 = 1 SPDT    4 = 1 SPST-NO					
<b>Used Function</b> Q = Standard thermoset frames    Blank = Legacy thermo plastic frames						
<b>Option</b> Customer assigned suffix "X" where "X" may be any alphanumeric character or any combined alphanumeric character.						



### Auxiliary Contact Block and Microswitch Block Installation

1. Insert bottom tab of block into metal base notch of the contactor in the direction of arrow ①.
2. Insert one mounting hook of the block on the body in the direction of arrow ②, **and then** push the mounting hook to the direction of other side mounting hook to ensure the assembly in place. Pls. see the OK and NG photos as below. Insert the other mounting hook on the body in the direction of arrow ③.
3. Push the block top tab in the direction of arrow ④ until top tab locks into contactor top notch.
4. Inspection after installation: Press the contact support, up and down without interference is qualified, otherwise unqualified, and need to reassemble it.
5. Dismounting: Push out the top tab of the block from the contactor in the direction of arrow ⑤ (**Don't charge excessive force**, or else, it may cause the top tab fracture), and dismount the block in the direction of ⑥ **at the same time**.



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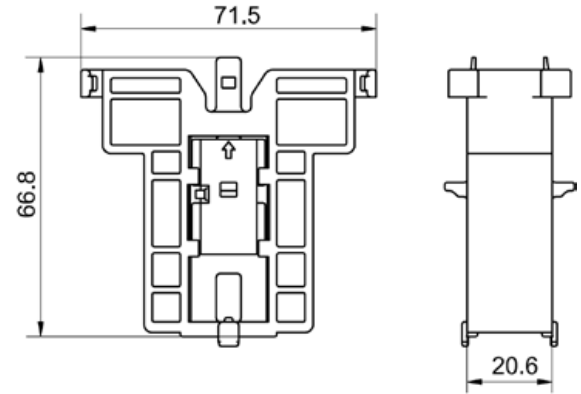
# XMC0 Series

## INTERLOCKS

To include in XMC0 Part Number, replace “Number of Poles” selection with **J22** (2 2P), **J23** (1 2P & 1 3P), **J32** (1 3P & 1 2P), or **J33** (2 3P). Interlock Pole Order is left to right.

### Interlock Blocks:

	C03	J	1Q	X
<b>Basic Designation</b>				
C03 = For XMC0 Definite Purpose Contactors.				
<b>Accessory Category</b>				
J = Mechanically Interlocked Block				
<b>Interlock Type</b>				
1Q = Match with 25-63A (Standard Thermoset Frame)				
2Q = Match with 75-90A (Standard Thermoset Frame)				
0 = Match with 25-40A (Legacy thermo plastic Frame)				
1 = Match with 50-63A (Legacy thermo plastic Frame)				
2 = Match with 75-90A (Legacy thermo plastic Frame)				
<b>Option</b>				
Customer assigned suffix "X" where "X" may be any alphanumeric character or any combined alphanumeric character.				



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