



EIM CONTROLS

HQ-SERIES

QUARTER TURN ELECTRIC ACTUATORS



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HQ with LCU-B Controls

The HQ Series Electric Quarter Turn Actuators are an extension of EIM's world famous 2000 Series M2CP & TEC2000 Actuators. This new range offers a light weight, compact unit suitable for butterfly, ball and plug valves including damper control. Torque capacities range from 40 ft-lb to 2,170 ft-lb (6 kg-m to 3000 kg-m) Models are available for 1 & 3 Phase Service and also 24 VDC and 24VAC.

- Conforms to AWWA C504-93 Requirements.
- Standard construction is rated Nema 6, IP67, with optional IP68 temporary submergence.
- All units (except HQ-006) are double reduction worm gear drives, which provide inherent self-locking characteristics. Motor brakes are not required.
- Main housing electrical enclosure is a spigot fit (slight taper) for easy removal and equipped with captive bolts.
- Declutchable handwheel feature which can be padlocked to avoid unauthorized operation.
- (4) limit switches and open/close torque switches.
- Removable Drive Bushing for ease of machining.
- Advanced Local Control Stations.
 - 3 phase available with digital position indication and separate terminal chamber.
 - 4-20ma proportional control (modulating) option.



STANDARD CONFIGURATION

① Manual Override (declutching system)

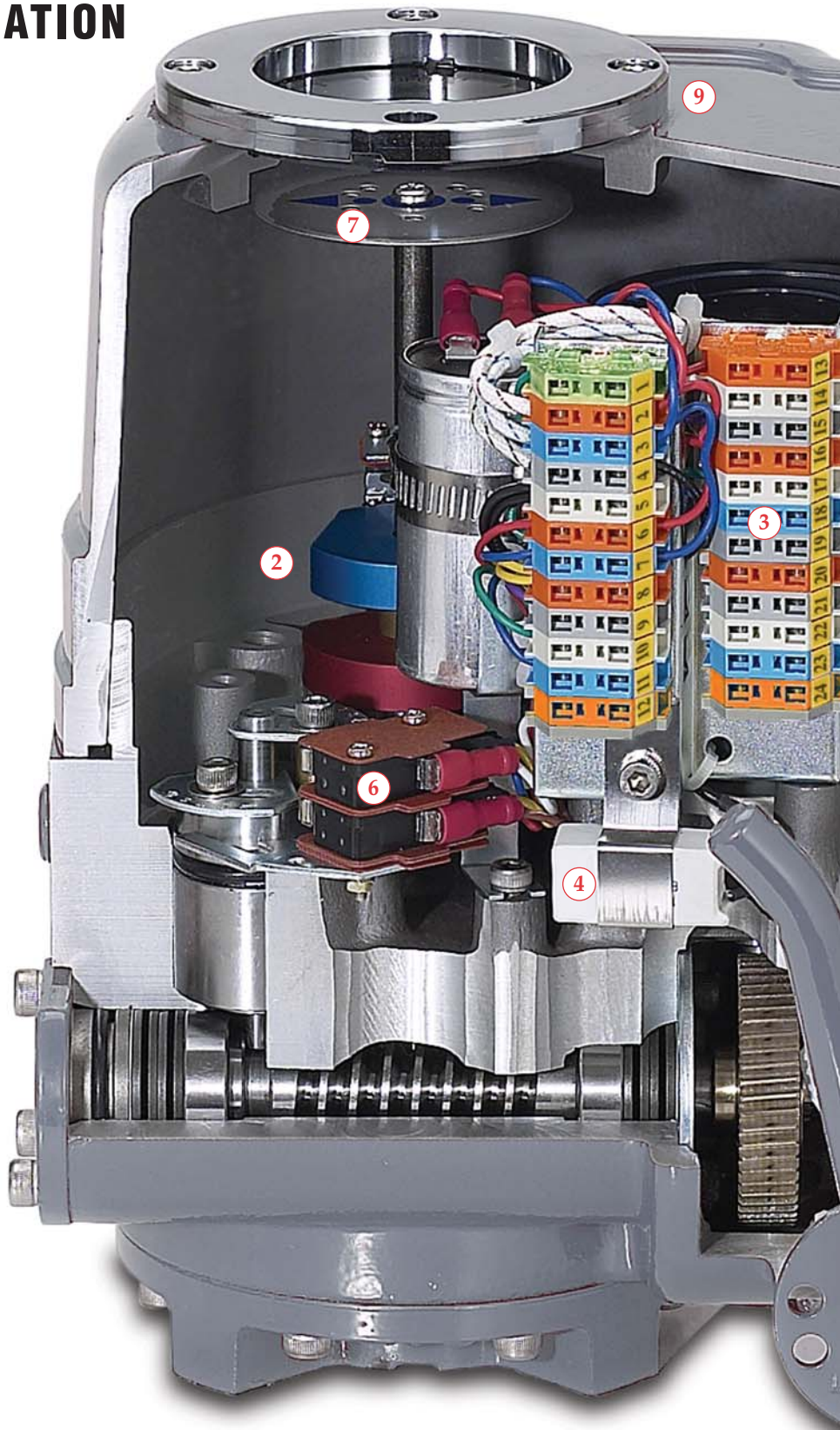
- Manual declutch lever provides positive engagement for emergency manual operation. Easy to declutch even under jammed valve condition.
- Power drive automatically restored when motor starts.
- Lever can be padlocked.

② Limit Switches

- 4 limit switches.
- 2 switches are dedicated for internal operation. 2 volt-free contacts are available for customer use.
- Switches are easily set. Each switch can be set and locked without disturbing other switch settings.

③ Terminal Block

- 24 Terminals
- Wire stripped length: .33in (8-9 mm)
- Terminal dimensions: .39 X .87 X 1.26 in (10 X 22 X 32 mm)





4 Heater

- 7 or 10 watt.

5 Main Housing

- Main housing electrical enclosure is a spigot fit (slight taper for easy removal and equipped with captive bolts.

6 Torque Switch

- Open and close torque switches protect the valve. Switches are set at unit rating to eliminate nuisance tripping.

7 Continuous Mechanical Dial Position Indicator.

8 Manual Override Handwheel

9 Surface Coating

- All castings are fully anodized, internally and externally.
- Exterior polyester powder topcoat.

HQ OPTIONAL FEATURES

Available Options

Local Control Stations

LCU-D	1-Phase, (HQ-006 Only) (2) Selector Switches, Open/Stop/Close & Local/Remote <i>Note: LCU-D rated Nema 4, IP65 only</i>
LCU-A	1 Phase - Suitable for HQ-015 to HQ-300 (2) Selector Switches, Open/Close & Local/Off/Remote, (5) LED's, Power On (White), Remote (Blue), Fault (Yellow), Full Open (Red), Opening (Flashing Red), Full Close (Green), Closing (Flashing Green), Control Transformer (110/230 Volt) <i>Note: For Open/Close Service only - Not Modulating</i>
LCU-B1	1 Phase - Suitable for HQ-015 to HQ-300 (2) Selector Switches, Open/Close & Local/Off/Remote, (5) LED's, Power On (White), Remote (Blue), Fault (Yellow), Full Open (Red), Opening (Flashing Red), Full Close (Green), Closing (Flashing Green), Control Transformer (110/230 Volt) <i>Note: Suitable for use with PCU (Modulating) & CPT</i>
LCU-B3	3 Phase - Suitable for HQ-015 to HQ-300 (2) Selector Switches, Open/Close & Local/Off/Remote, (5) LED's, Power On (White), Remote (Blue), Fault (Yellow), Full Open (Red), Opening (Flashing Red), Full Close (Green), Closing (Flashing Green), Magnetic Reversing Starter, Control Transformer, Phase Detection <i>Note: Suitable for use with PCU (Modulating) & CPT</i>
LCU-C	3 Phase - Suitable for HQ-015 to HQ-300 Same Selector Switches as LCU-A (3) LED's, Open (Red), Close (Green), Fault (Yellow), Digital Position Indication, Separate Terminal Chamber, Magnetic Reversing Starter, Control Transformer, Auto-Phase Correction, <i>Note: Suitable for use with PCU (Modulating) & CPT</i>



LCU-B

Other Options

PCU	Proportional Control Unit (<i>Modulating Service</i>) Input Signal: 4-20mA, 0-20mA, 0-10 VDC, 1-5 VDC, Output Signal: 4-20mA, 0-10 VDC <i>Note: If PCU supplied with LCU-D, no local controls available</i>
CPT	Current Position Transmitter Output Signal: 4-20mA
PIU	Potentiometer, 1 K Ohm, included with PCU & CPT
IP68	Temporary Submersible Service (Not HQ-006) <i>35 Foot Head-72 Hours (10 Meter-72 Hours)</i>
EXA	Explosionproof KOSHA Certified (Korean Occupational Safety & Health Agency) Ex d IIB T4 & IP67 (<i>Equivalent to Class I, Group C&D, Division I</i>) SIRA Pending

LCU-C



HQ CAPACITIES & RATINGS

Model Size	Output Torque			Duty Cycle %	Operating Time (second)		Maximum Bore		No. Handwheel Turns	ISO Mounting Base	Approx. Weight	
	(ft-lb)	(in-lb)	(kg-m)		60 Hz	50 Hz	(inch)	(mm)			(lb)	(kg)
HQ-006	40	480	6	35	12	15	0.55 Sq.	14 Sq.	8.0	F03/05/07	7	3
HQ-008	60	720	8	30	13	16	0.79	20	10.0	F07	16	7.4
HQ-015	110	1,320	15	30	21	25	0.87	22	11.0	F07/F10	37	16.6
HQ-020	145	1,740	20	30	21	25	0.87	22	11.0	F07/F10	37	16.6
HQ-030	215	2,580	30	30	26	31	1.38	35	13.5	F10/F12	49	22
HQ-050	360	4,320	50	30	26	31	1.38	35	13.5	F10/F12	51	23
HQ-060	435	5,220	60	30	26	31	1.38	35	13.5	F10/F12	51	23
HQ-080	580	6,960	80	30	31	37	1.77	45	16.5	F12/F14	64	29
HQ-120	870	10,440	120	30	31	37	1.77	45	16.5	F12/F14	64	29
HQ-200	1,450	17,400	200	30	93	112	2.56	65	49.5	F14/F16	166	75
HQ-300	2,170	26,040	300	30	93	112	2.56	65	49.5	F14/F16	166	75

Model Size	Rated Current (amps)					Local Control Options		
	1-Phase		3-Phase		D.C. 24V	1-Phase	3-Phase	D.C.
	110V	230V	380V	460V				
HQ-006	0.40	0.20	-	-	0.60	LCU-D	-	-
HQ-008	1.10	0.55	-	-	1.00	LCU-D	-	-
HQ-015	1.65	0.88	0.31	0.30	2.20	LCU-A/B	LCU-B/C	C/F
HQ-020	1.67	0.89	0.31	0.30	2.50	LCU-A/B	LCU-B/C	C/F
HQ-030	1.85	0.92	0.35	0.34	2.90	LCU-A/B	LCU-B/C	C/F
HQ-050	3.60	1.55	0.59	0.58	-	LCU-A/B	LCU-B/C	C/F
HQ-060	3.65	1.60	0.60	0.59	-	LCU-A/B	LCU-B/C	C/F
HQ-080	4.10	2.15	0.85	0.79	-	LCU-A/B	LCU-B/C	C/F
HQ-120	4.20	2.35	0.87	0.81	-	LCU-A/B	LCU-B/C	C/F
HQ-200	4.10	2.15	0.85	0.79	-	LCU-A/B	LCU-B/C	C/F
HQ-300	4.20	2.35	0.87	0.81	-	LCU-A/B	LCU-B/C	C/F

Standard Features

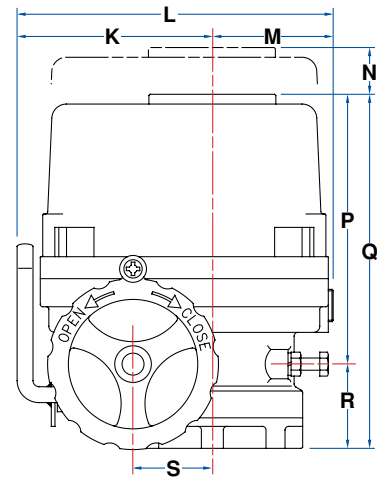
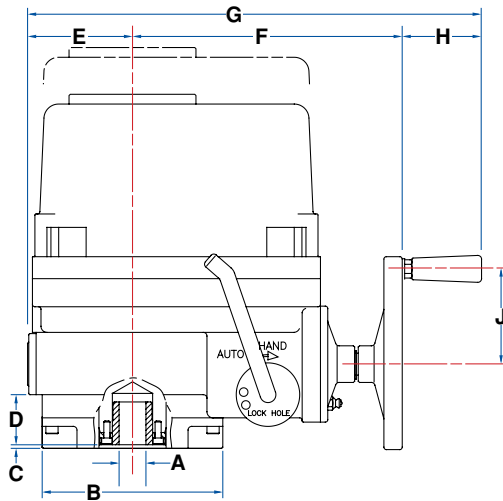
Enclosure	Weatherproof, Nema 4 & 6, IP67, Captive Enclosure Cover Bolts
Materials	Housing & Enclosure - Aluminum Alloy Worm Gear - Bronze, Worm - Alloy Steel
Duty Cycle	30% Defined as Run Torque
Motor Design	Squirrel Cage Induction
Motor Protection	Built-In thermals, Open 150°C +/-5°C, Close 97°C +/- 15°C
Limit Switches	(4) Switches, SPDT, 250 VAC, 10 Amp Rated
Torque Switches	(2) Switches, SPDT, 250 VAC, 10 Amp Rated
Terminal Block	(24) Points
Travel	90° +/- 10° (0-110°), mechanical stop adjustment
Position Indicator	Continuous
Manual Over-ride	Declutch Mechanism
Self-Locking	Double Reduction Worm Gear (HQ-006 is spur drive with Motor Brake)
Space Heater	7-10 Watt
Lubrication	Grease, Moly EP Type
Temperature Rated	Basic Actuator, -14°F to +158°F (-10°C to +70°C) With LCU/Control Boards, -14°F to +130°F (-10°C to +55°C)
Coating	External & Internal Powder Coated, Polyester, EIM Grey Color
Drive Bushing	Removable Lug Drive (HQ-006 with 14 mm Square/0.55 inch)



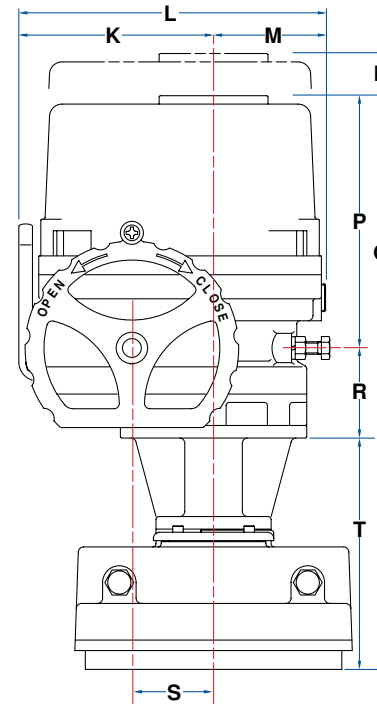
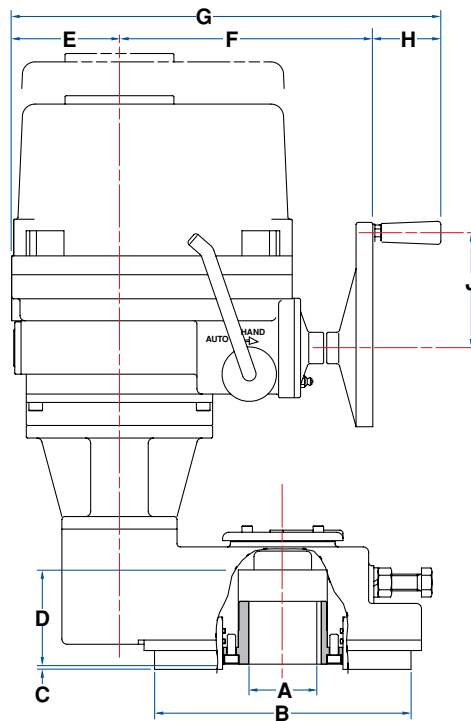
Type LCU-A & B

BASIC ACTUATOR DIMENSIONS

**HQ-008
to
HQ-120**



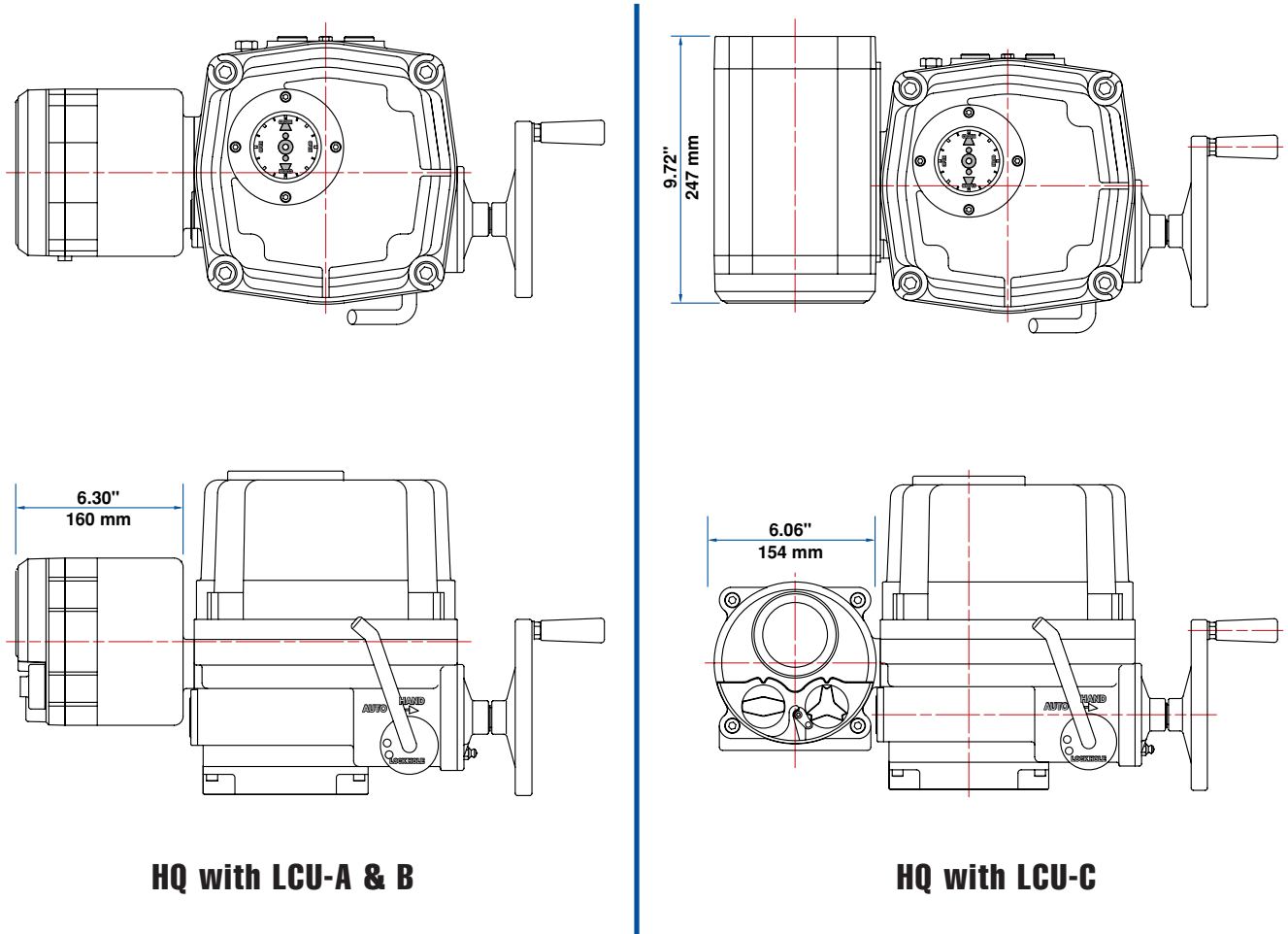
**HQ-200
to
HQ-300**



Model	Base	A-Max.	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
HQ-008	F07	0.79 (20)	3.46 (88)	0.12 (3)	1.26 (32)	1.97 (50)	6.18 (157)	10.16 (258)	2.01 (51)	2.36 (60)	3.94 (100)	6.69 (170)	2.76 (70)	4.72 (120)	6.57 (167)	8.66 (220)	2.09 (53)	1.57 (40)	
HQ-015	F07 & F10	0.87 (22)	4.92 (125)	0.12 (3)	1.65 (42)	2.87 (73)	7.87 (200)	13.31 (338)	2.56 (65)	3.07 (78)	5.59 (142)	9.02 (229)	3.43 (87)	6.30 (160)	7.56 (192)	10.24 (260)	2.68 (68)	2.13 (54)	
HQ-030	F10 & F12	1.38 (35)	5.83 (148)	0.12 (3)	1.93 (49)	3.23 (82)	8.70 (221)	14.49 (368)	2.56 (65)	3.07 (78)	6.30 (160)	10.20 (259)	3.90 (99)	7.09 (180)	8.70 (221)	11.42 (290)	2.72 (69)	2.56 (65)	
HQ-080	F12 & F14	1.77 (45)	7.01 (178)	0.12 (3)	2.24 (57)	4.06 (103)	9.53 (242)	16.14 (410)	2.56 (65)	4.33 (110)	7.32 (186)	11.69 (297)	4.37 (111)	8.27 (210)	9.49 (241)	12.40 (315)	2.91 (74)	3.07 (78)	
HQ-200	F16	2.56 (65)	9.65 (245)	0.20 (5)	3.54 (90)	4.06 (103)	9.53 (242)	16.14 (410)	2.56 (65)	4.33 (110)	7.32 (186)	12.56 (319)	5.24 (133)	8.27 (210)	9.49 (241)	21.57 (548)	2.91 (74)	3.07 (78)	9.17 (233)

First dimensions are U.S. inch
Second dimensions in parenthesis are Metric mm

OPTIONAL CONTROL PACKAGE DIMENSIONS



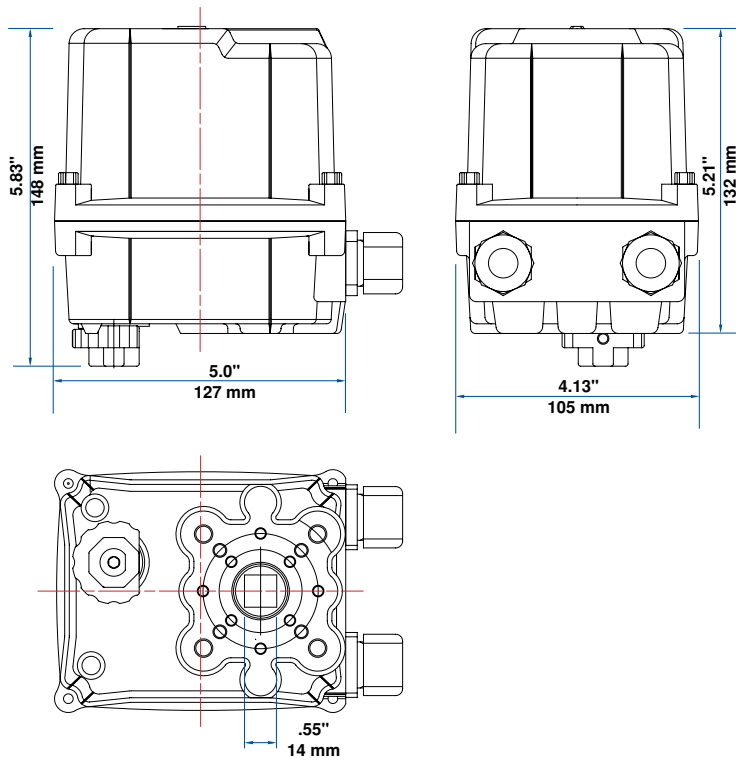
HQ with LCU-A & B

HQ with LCU-C

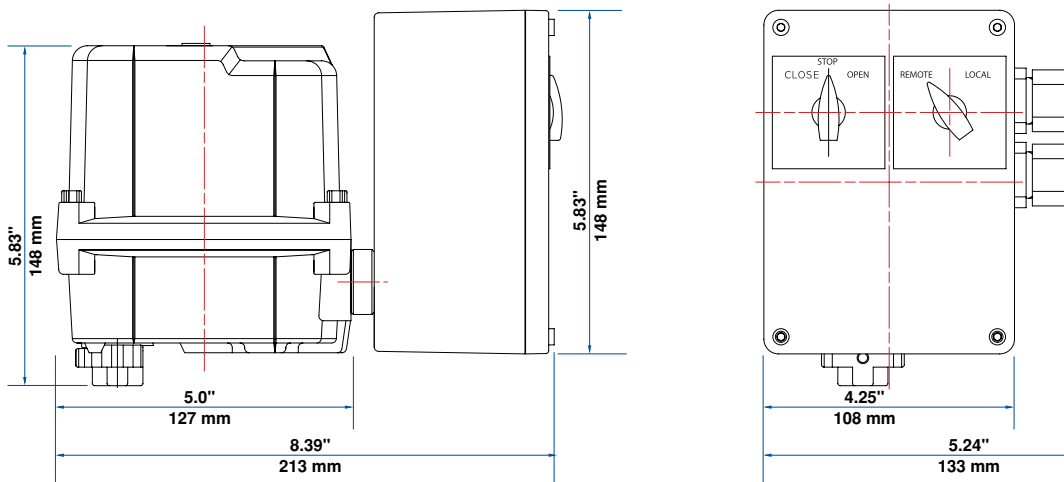
ISO 5211 Mounting Base	Bolt Circle		No. Taps Straddle Centerline	Tap Size		Tap Depth	
	Metric	Inch		Metric	Inch	Metric	Inch
F07	70	2.76	4	M8	0.31	12	0.47
F10	102	4.02	4	M10	0.39	15	0.59
F12	125	4.92	4	M12	0.36	18	0.71
F14	140	5.51	4	M16	0.67	24	0.94
F16	165	6.50	4	M20	0.79	30	1.18

Note: All bases are Metric. The inch designation is for reference only

MODEL HQ-006 DIMENSIONS



Standard HQ-006



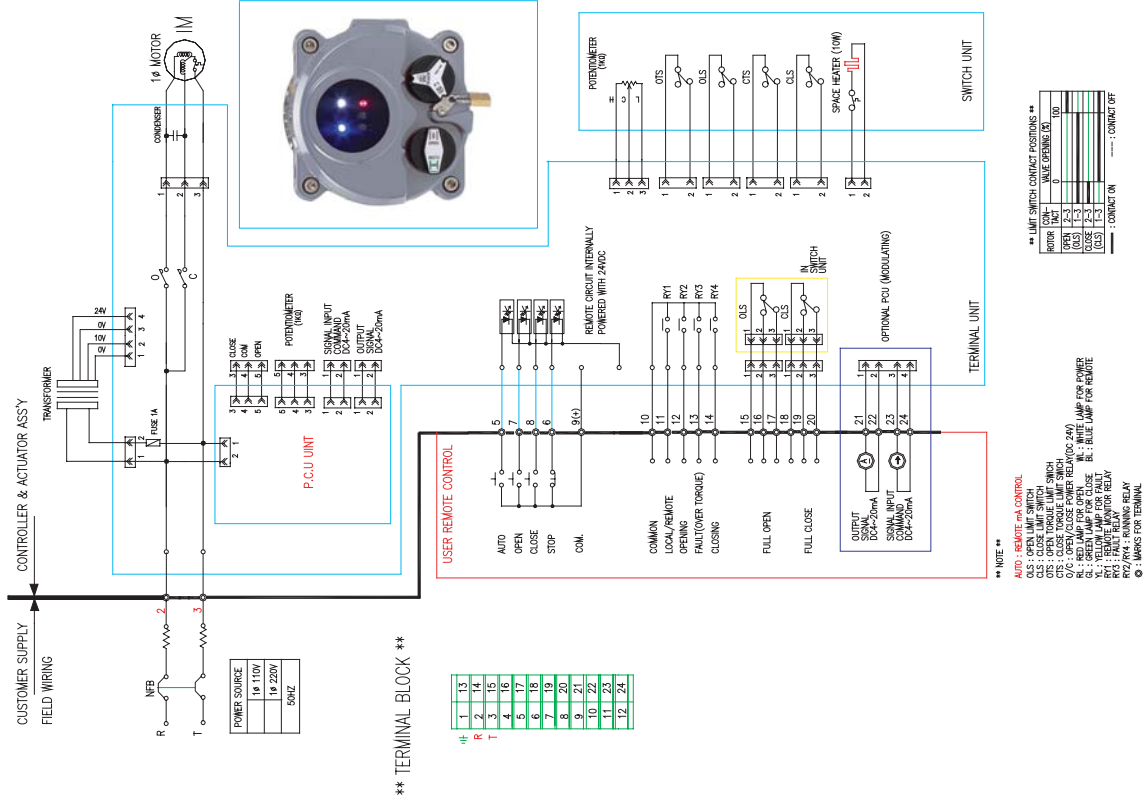
HQ-006 with Optional PCU or LCU-D

ISO 5211 Mounting Base	Bolt Circle		No. Taps Straddle Centerline	Tap Size		Tap Depth	
	Metric	Inch		Metric	Inch	Metric	Inch
F03	36	1.42	4	M5	0.20	12	0.47
F05	50	1.97	4	M6	0.24	12	0.47
F07	70	2.76	4	M8	0.31	12	0.47

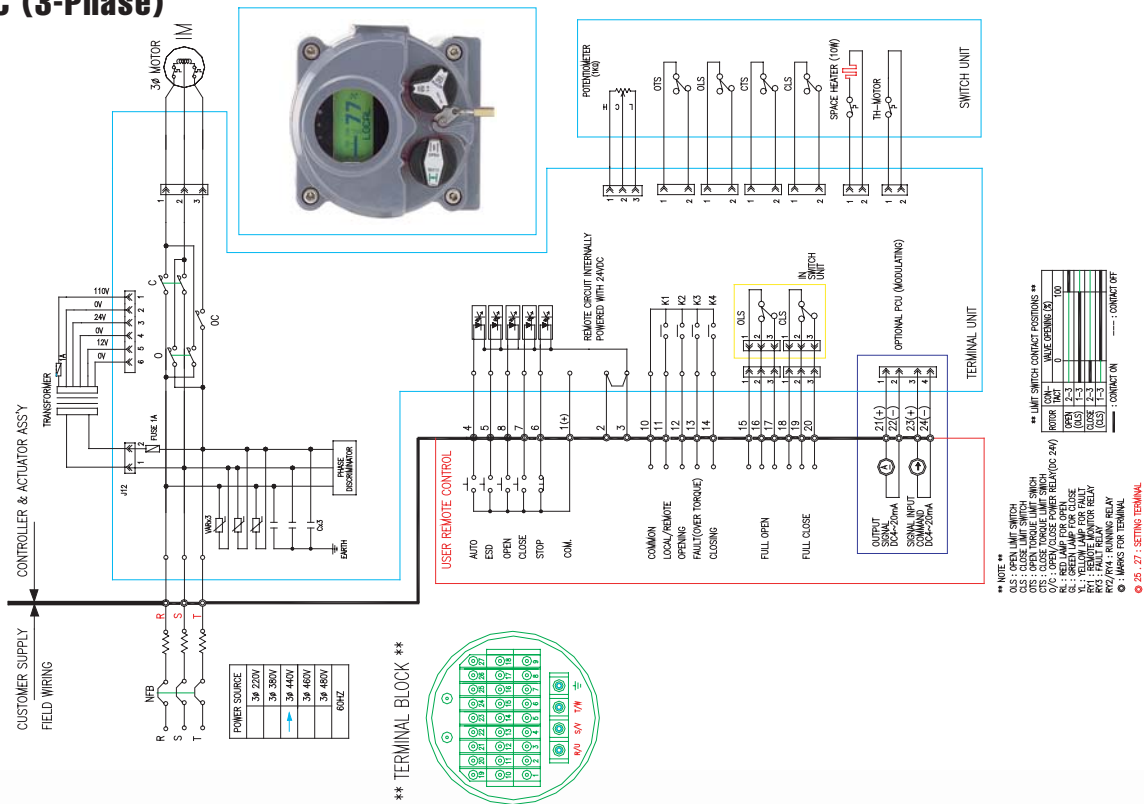
Note: All bases are Metric. The inch designation is for reference only

DIAGRAMS

LCU-B (1-Phase)



LCU-C (3-Phase)



EIM PRODUCTS COVER THE GLOBE. SO DOES EIM SALES/SERVICE SUPPORT.



EIM distributors and representatives are strategically located across six continents for prompt response to customer needs. An Eastern Hemisphere Sales Office in the U.K. serves as a link to Europe, Asia, and the Middle East for EIM's North American headquarters.

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