



ELECTRIC LINEAR ACTUATOR HL-SERIES



IECEX CE 0344 Ex $\text{I}^{\text{C}}\text{s}$

Valve automation leader **HKC**

HCAG-HL-16 Rev.2



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Company Introduction

Since 1991, HKC has made every effort to deliver the highest quality products and services for our customers. Moreover, we have worked very hard to lead and advance the rapidly changing industry through continuous innovation management, technical development, human resource management, and etc.

Based on technical theory and diverse experience, HKC's unique know-how is the basic power of development and scientific production of all products, and HKC is growing into a first class corporation that leads valve automation industry with cutting-edge technologies.

HKC puts emphasis on corporate social responsibility. We constantly seek for opportunities with partners and customers for mutual progress, share and development. In addition all of our services are processed through customer-focused management that prioritizes customer satisfaction utmost.

HKC will continually strive to be a global leading corporation that leads the 21st century valve automation industry by creating a great contribution towards the future with the highest quality products, endless development of new technology and continuous customer services.

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Description

- HL-series electric linear actuator is specially designed for linear operating valves such as globe valve and similar usages.
- Wide range of output force and control options to suit your specific requirements.
- High reliability and performance for valve automation system.



Standard

Features

- Compact and light weight
- High corrosion resistance
- Self locking with minimum backlash
- Rugged design construction with o-ring system for water proof and flame proof
- Hand wheel for manual operation
- Force switches / Limit switches
- Space heater with thermostat for preventing overheat
- Various output force from 5 kN to 25 kN
- Wide range of voltages available



Options

Design Construction

Position control unit

Limit switches & potentiometer

Actuator cover

Polyester powder coating with high corrosion resistance

Motor

1-phase, 3-phase and 24V dc

PCU

Proportional control unit
(4-20 mA, 0-10 V, 2-10 V, 1-5 V)

Force switch

Force switch

Manual hand wheel

Motor

Pad lockable for maintenance safety

Upper base

Force spring housing

Driving rod cover

Guide rod holder

Driving rod cover

Guide rod holder

Locking plate

Union joint & nut

A type



B type

Performance Data

Model	Max. output force	Stem speed (mm/sec)	Max. stroke	Duty rate IEC34-1	Rate current (A), (50/60 Hz)						No. of handle turn	Weight
					dc	ac, 1-phase, 50/60 Hz		ac, 3-phase, 50/60 Hz				
						24 V	110 V	220 V	380 V	440 V		
HL-05KN	5	0.44/0.53	60	50	2.1	1.0 / 1.0	0.6 / 0.5	0.3 / 0.3	0.6 / 0.4	NA	227	11
HL-07KN	7	0.44/0.53	60	50	2.7	1.2 / 1.1	0.6 / 0.6	0.3 / 0.4	0.6 / 0.5	NA	227	11
HL-10KN	10	0.69/0.82	70	50	3.9	1.9 / 1.8	0.9 / 0.9	0.6 / 0.4	0.6 / 0.4	0.6 / 0.3	184	21
HL-12KN	12	0.69/0.82	70	50	4.6	2.1 / 2.0	1.0 / 1.0	0.7 / 0.5	0.6 / 0.4	0.6 / 0.4	184	21
HL-15KN	15	0.69/0.82	80	50	5.6	2.2 / 2.1	1.1 / 1.1	0.7 / 0.5	0.7 / 0.4	0.6 / 0.4	210	21
HL-18KN	18	0.69/0.83	100	50	5.8	1.8 / 2.0	0.9 / 1.1	0.6 / 0.5	0.4 / 0.3	0.4 / 0.3	260	33
HL-20KN	20	0.69/0.83	100	50	6.4	2.1 / 2.4	1.0 / 1.2	0.7 / 0.6	0.7 / 0.5	0.7 / 0.5	260	33
HL-25KN	25	0.69/0.83	100	50	7.8	3.2 / 4.0	1.9 / 2.1	0.9 / 0.8	0.8 / 0.6	0.8 / 0.6	260	33

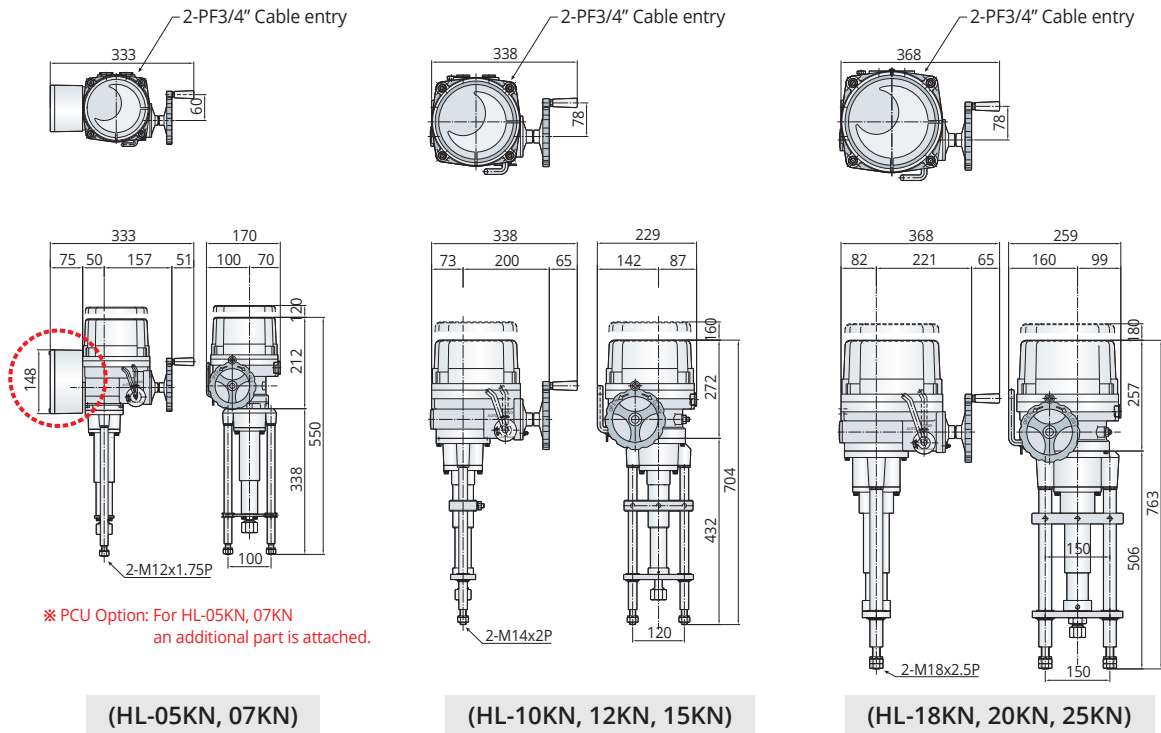
Standard Specification

Enclosure	Weatherproof enclosure IP67
Power supply	24 V dc 110/220 V ac 1 ph, 50/60 Hz 380/440/460 V ac 3 ph, 50/60 Hz, ±10%
Duty cycle (on-off)	S2, Max. 30 min (room temp., average load of 50% of max. force)
Duty cycle (modulating)	S4, 50% Max. 300-1600 starts/hour (room temp., average load of 50% of max. force)
Motor	Induction motor (reversible motor)
Limit switches	Open/close, SPDT, 250 V ac 16 A rating
Additional limit switches	Open/close, SPDT, 250 V ac 16 A rating (except HL-05KN - 07KN)
Force switches	Open/close, SPDT, 250 V ac 16 A rating
Stall protection	Built-in thermal protection, open at 150±5 °C / close at 97±15 °C
Manual override	Declutching mechanism
Self locking	Provided by double worm gear
Space heater	HL-05KN,07KN: 5 W (12/24 V dc, 110/220 V c), HL-10KN~25KN: 10 W (12/24 V dc, 110/220 V ac), anti-condensation
Cable entries	Standard: 2 x PF3/4", Flame proof: 2 x NPT3/4" or 2 x M25
Lubrication	Standard: grease moly (EP type), option: Tribolube-18 (for low temp.)
Terminal block	Spring loaded lever push type
Materials	Steel, aluminium alloy, aluminium bronze
Ambient temperature	Standard: -20 to +70 °C, Flame proof: -20 to +60 °C (except optional electronic board)
Ambient humidity	90% Max. RH (non-condensing)
External coating	Anodizing treatment and polyester powder coating

Optional Specification

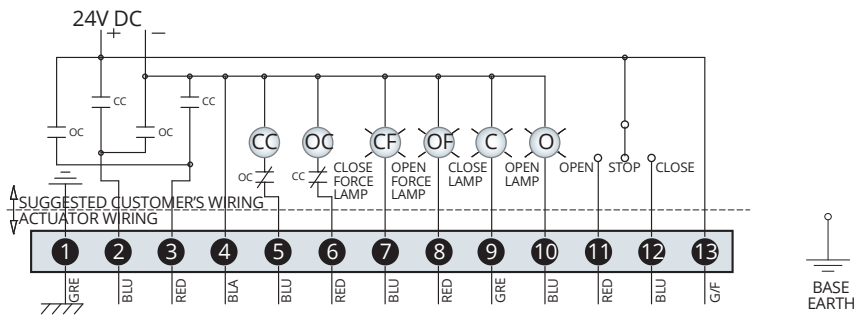
EXD	Flame proof enclosure (EX d IIB T4)
WTA	Watertight enclosure actuator (IP68 10 m 72 h)
PIU	Potentiometer unit (0-1 kΩ)
CPT	Current position transmitter (output: 4-20 mA dc)
PCU	Proportional control unit (input/output: 0-10 V dc or 4-20 mA dc)
IMS	Integral magnetic starter (control power: 110/220 V ac 1 ph, 50/60 Hz, ±10%)
DCM	DC motor (24 V dc)
ADCM	Multi ac-dc 24 V (integral)
LCU-B	Local/remote control unit
LCU-C	Integral control unit (LCU+IMS+auto phase discriminator)
RBP	Rechargeable battery backup for ESD (Emergency Shut Down)
MSB	Mounting support base & driving rod

Dimensional Drawing (standard)

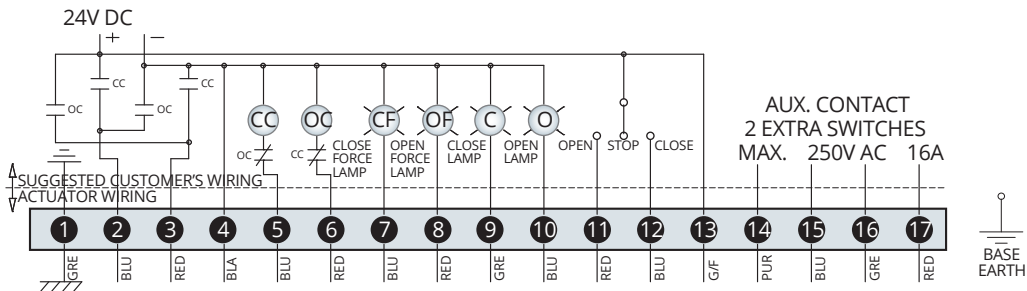


Wiring Diagram (24 V dc)

ON-OFF CONTROL for 24 V dc power supply (HL-05KN, 07KN)

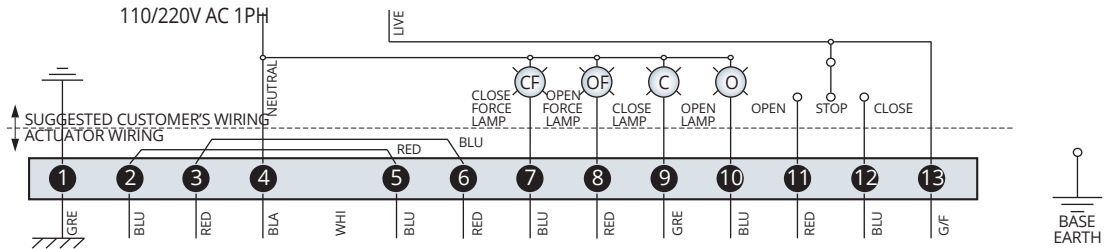


(HL-10KN, 12KN, 15KN, 18KN, 20KN, 25KN)

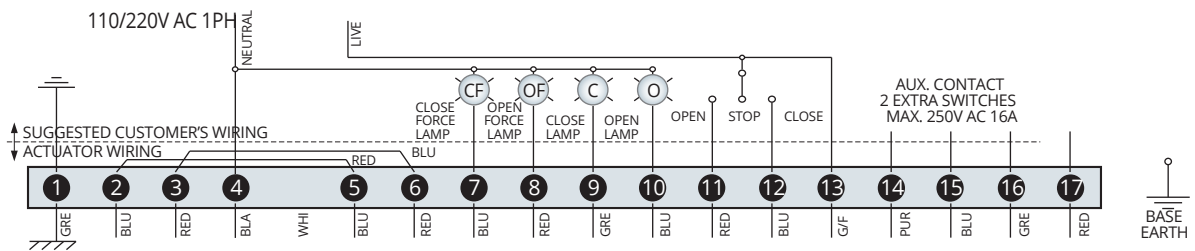


Wiring Diagram (1-phase)

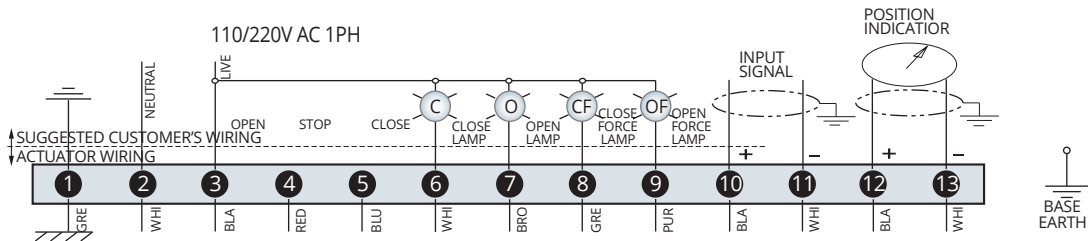
ON-OFF CONTROL for 1-phase power supply (HL-05KN, 07KN)



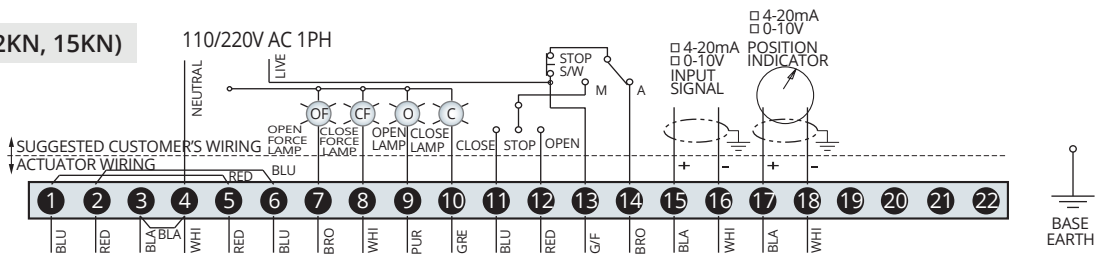
(HL-10KN, 12KN, 15KN, 18KN, 20KN, 25KN)



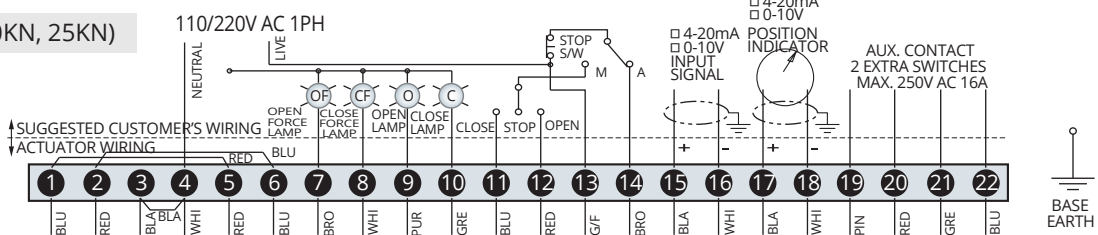
PROPORTIONAL CONTROL for 1-phase power supply (HL-05KN, 07KN)



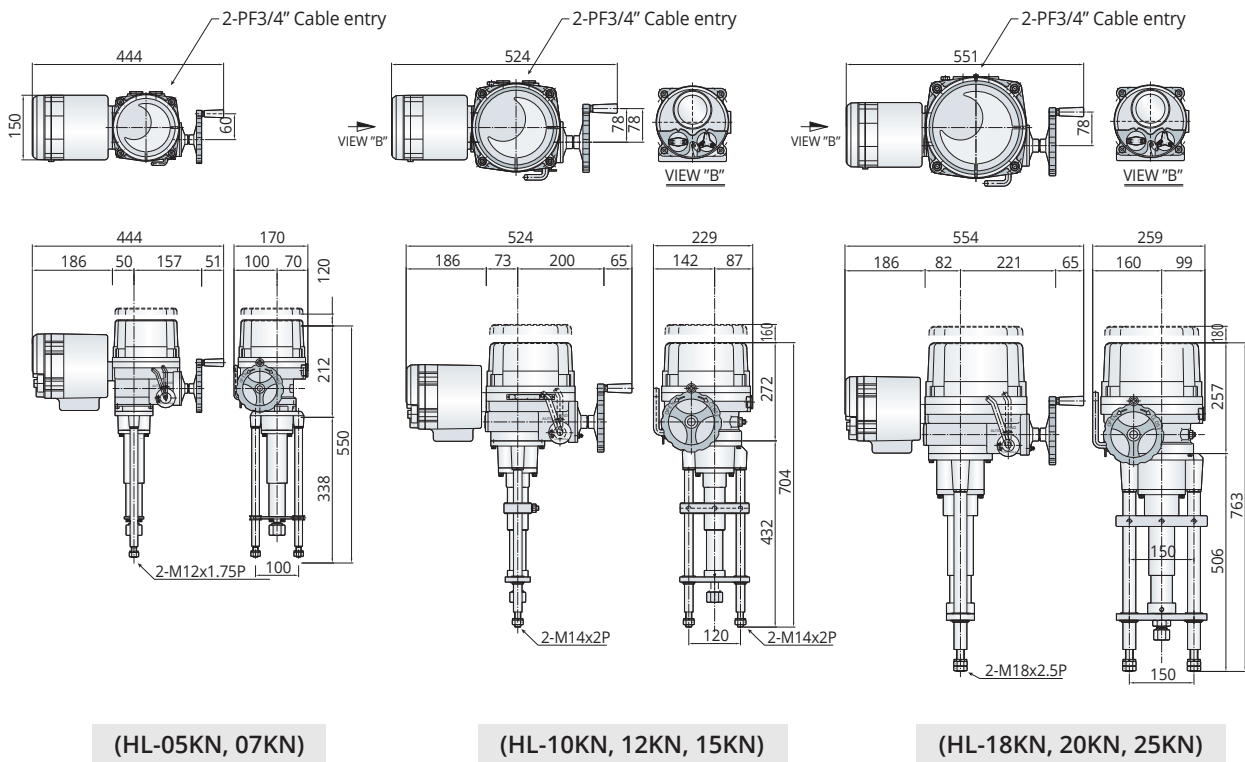
(HL-10KN, 12KN, 15KN)



(HL-18KN, 20KN, 25KN)

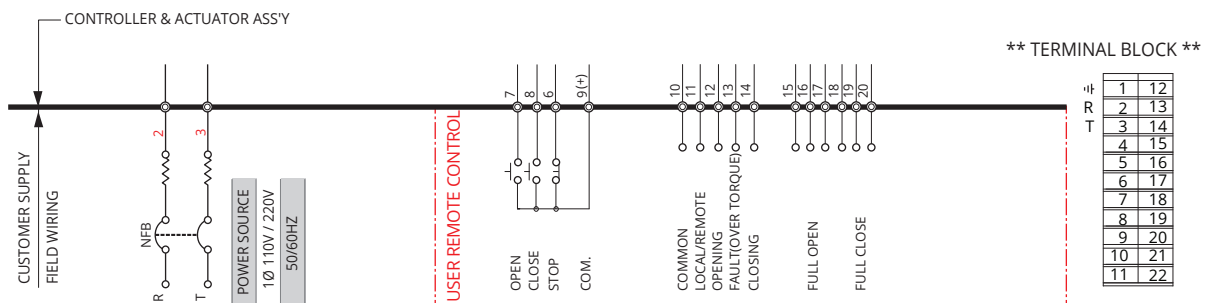


Dimensional Drawing (LCU-B)

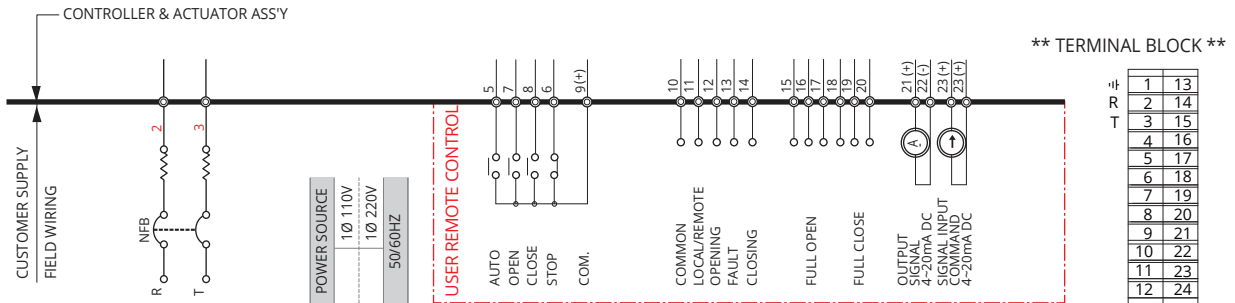


Wiring Diagram (LCU-B)

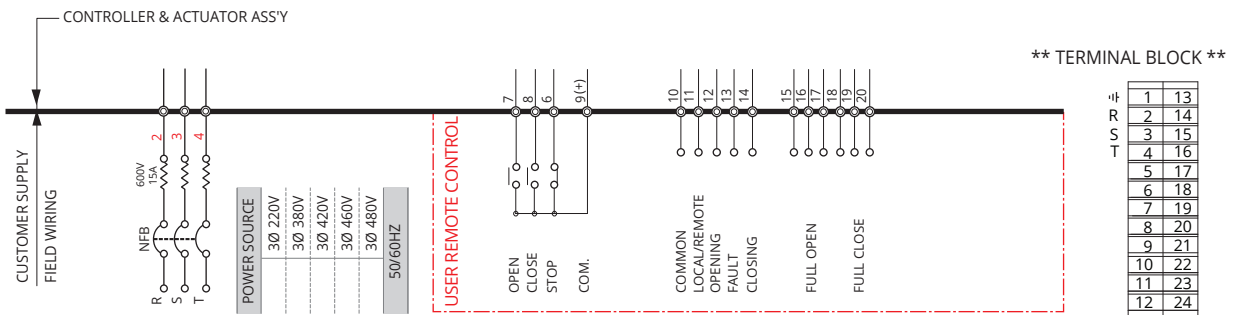
ON-OFF CONTROL with LCU-B1 for 1-phase power supply (HL-05KN - 25KN)



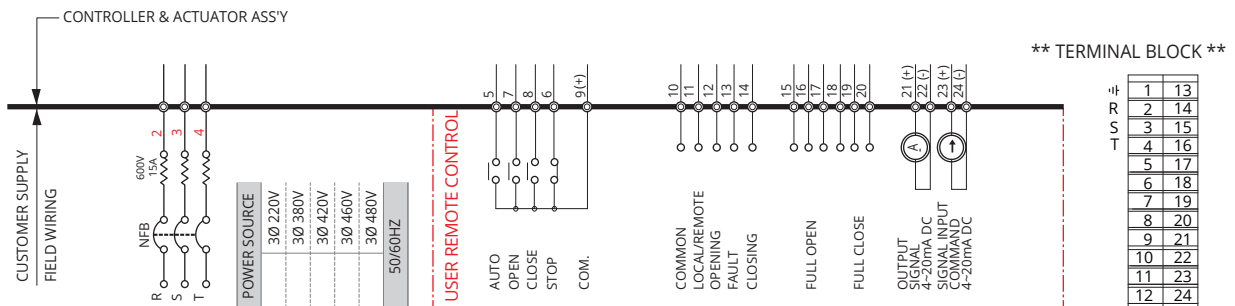
PROPORTIONAL CONTROL with LCU-B1 for 1-phase power supply (HL-10KN, 12KN, 15KN, 18KN, 20KN, 25KN)



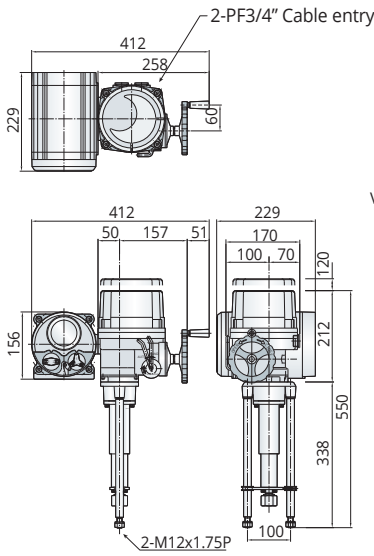
ON-OFF CONTROL with LCU-B3 for 3-phase power supply (HL-05KN - 25KN)



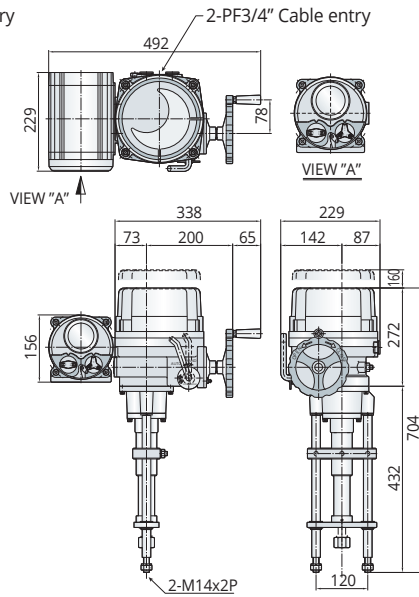
PROPORTIONAL CONTROL with LCU-B3 for 3-phase power supply (HL-10KN, 12KN, 15KN, 18KN, 20KN, 25KN)



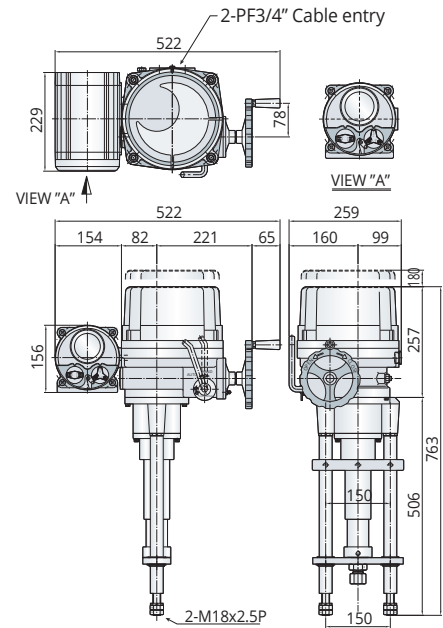
Dimensional Drawing (RBP)



(HL-05KN, 07KN)



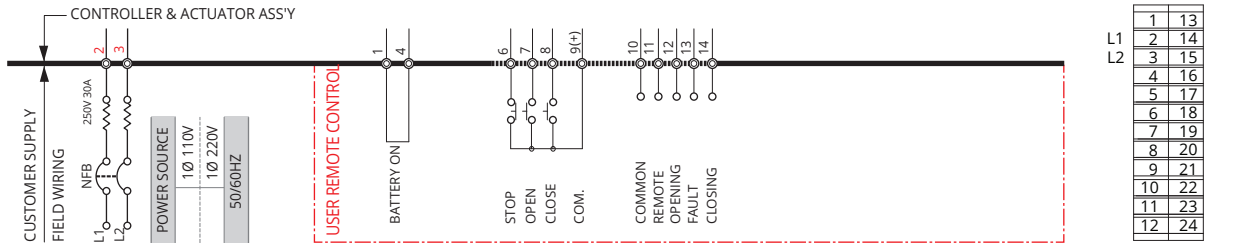
(HL-10KN, 12KN, 15KN)



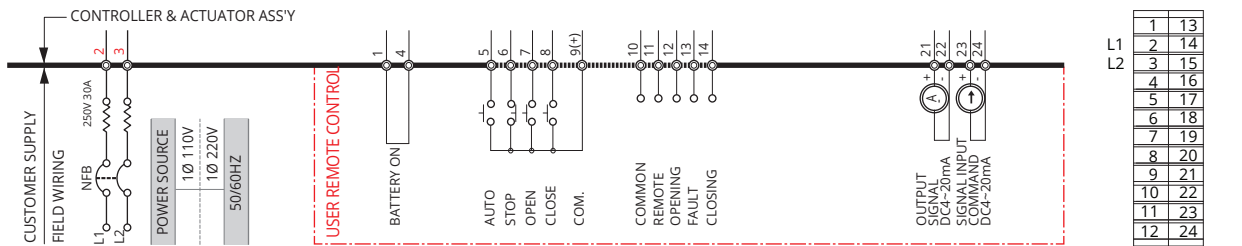
(HL-18KN, 20KN, 25KN)

Wiring Diagram (RBP)

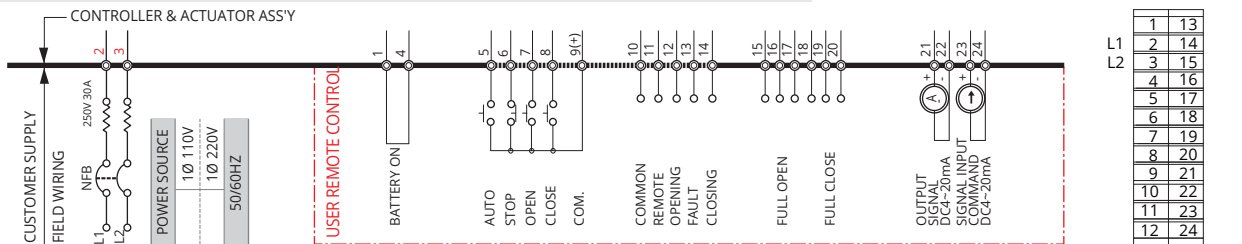
ON-OFF CONTROL with RBP (HL-05KN - 25KN)



PROPORTIONAL CONTROL with RBP (HL-05KN, 07KN, 10KN, 12KN, 15KN)



PROPORTIONAL CONTROL with RBP (HL-18KN, 20KN, 25KN)



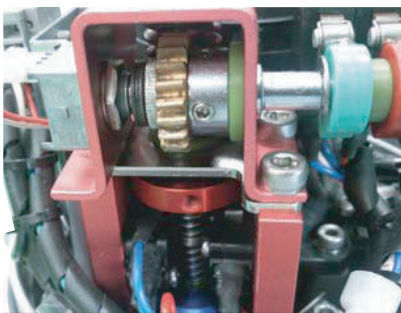
Ordering Code

HL - **XX** **X** **X** **X** **X** **X**

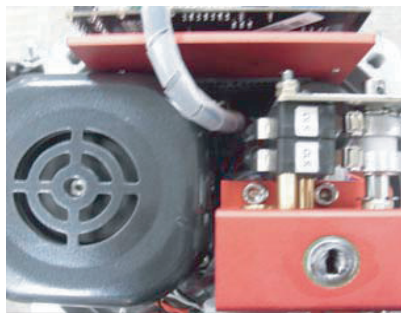
Model	Enclosure	Motor Voltage	Option 1	Option 2	Option 3
05 : 5KN 07 : 7KN 10 : 10KN 12 : 12KN 15 : 15KN 18 : 18KN 20 : 20KN 25 : 25KN	1 : Weather proof (IP67) 2 : Watertight (IP68) 3 : Flame proof (Ex d)	1 : 110 V ac / 1 ph 2 : 220 V ac / 1 ph 3 : 220 V ac / 3 ph 4 : 380 V ac / 3 ph 5 : 440 V ac / 3 ph 6 : 460 V ac / 3 ph 7 : 24 V ac-dc (ADCM) 8 : 24 V dc	0 : N/A 1 : PIU 2 : CPT 3 : PCU	0 : N/A 1 : IMS 2 : LCU-B 3 : RBP 4 : LCU-C	0 : N/A(STD) 1 : MSB

Remarks

※ Consult with the supplier for more details.



Force S/W



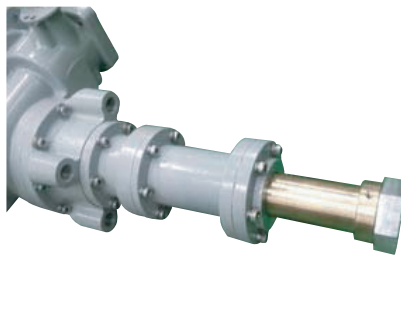
Limit S/W



PCU



Motor Assy



Drive bush & joint



PIU



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