



LINEAR ACTUATORS | 100 - 500 mm 1700 - 10000 N

DHI-SERIES

We offer a broad range of high quality linear actuators in standard and customized configurations. Our customer-centric approach makes us the ideal supplier for your project, especially to instrument and apparatus builders. In addition, we offer immediate delivery, thanks to always having a high number of motors in stock.

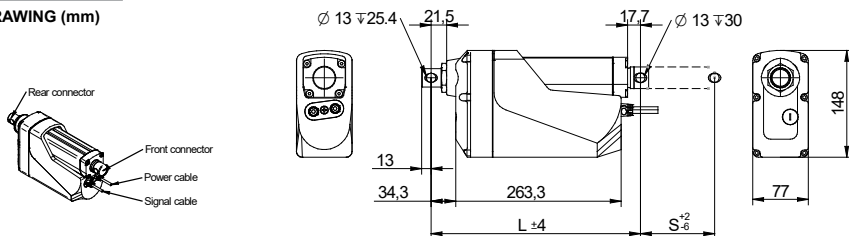
Customizations include:

- ✓ Customized harness
- ✓ Winding configuration
- ✓ Shaft configuration
- ✓ And more...

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DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION

DHI - VOLTAGE - GEAR RATIO - B - STROKE LENGTH - IP69K

Example: DHI-12-5-B-100-IP69K

ACCESSORIES

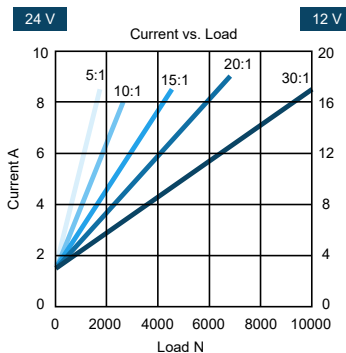
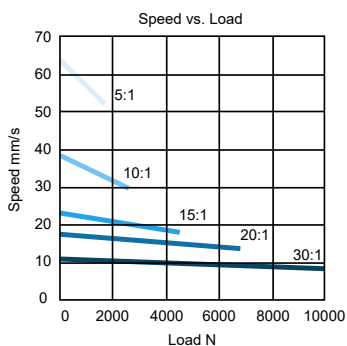


● C = customizations are offered on demand even for smaller quantities. Typical customizations are indicated with a green dot at column end. Please contact us for any customization request.

ACTUATOR DATA							C
Gear ratio		5:1	10:1	15:1	20:1	30:1	●
Voltage	V	12 24	12 24	12 24	12 24	12 24	
No load current	A	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	
Full load current	A	18 9	18 9	18 9	20 10	18 9	
Duty cycle	%	25	25	25	25	15	
Push/pull max.	N	1700	2600	4500	6800	10000	
Full load speed	mm/s	49	29	17	13	8	
No load speed	mm/s	66	40	24	18	11	

ACTUATOR STROKE DATA							C
Stroke length S	mm	100	200	300	400	500	●
Retracted length L	mm	290	390	490	590	690	
Life time no. of single strokes		160000	80000	53000	40000	32000	
Weight	kg	4.8	5.8	6.3	6.8	7.8	

ACTUATOR PERFORMANCE GRAPHS 12 V | 24 V

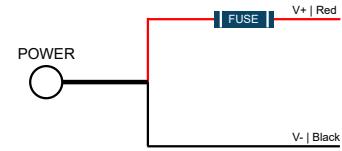


WARNING! It is forbidden to use Pulse Width Modulation (PWM) as input power to DHI as it will cause malfunction and cause permanent damage.

NOTES

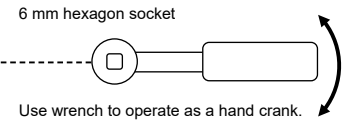
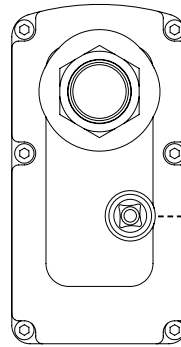
- Brushed DC motor is the standard configuration. Brushless DC motor available as an option. Contact us for more information.
- Over current protection specifications 25 A at 12 V DC and 12.5 A at 24 V DC, actuator will be stopped automatically. Over current protection is only applicable in emergency situations. It should not be used for the normal routine stopping needs of the actuator, as this may cause permanent damage.
- Non-condensing.
- 40 A for 12 V and 20 A for 24 V.
- Contact us for stroke lengths above 500 mm.

ACTUATOR WIRING DIAGRAM NO CONTROL OPTION C MANUAL OPERATION FUNCTION | HAND CRANK



ACTUATOR WIRING CONFIGURATION NO CONTROL OPTION

Wire	Symbol	Description
Red	V+	Connect red wire to "V+" and black wire to "V-" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
Black	V-	Input voltage is according to actuator voltage specification.

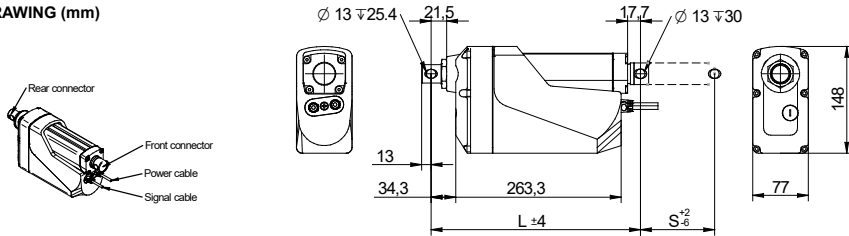


! Max. torque 1.7 Nm

HAND CRANK SPECIFICATION

Gear ratio		5:1	10:1	15:1	20:1	30:1
Distance per crank revolution	mm	2.2	1.3	0.80	0.61	0.39

DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION

DHI - VOLTAGE - GEAR RATIO - B - STROKE LENGTH - POT - IP69K

Example: DHI-12-5-B-100-POT-IP69K

ACCESSORIES



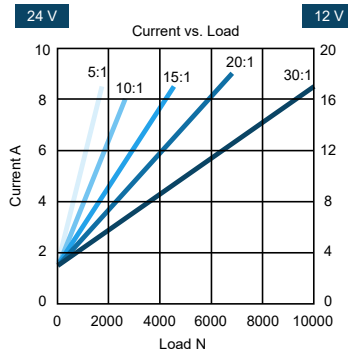
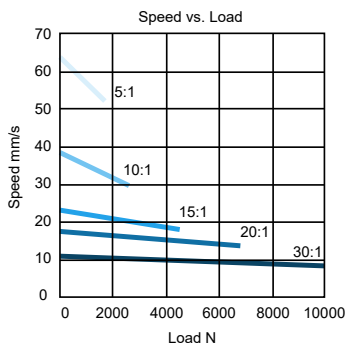
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ACTUATOR DATA							C
Gear ratio		5:1	10:1	15:1	20:1	30:1	●
Voltage	V	12 24	12 24	12 24	12 24	12 24	
No load current	A	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	
Full load current	A	18 9	18 9	18 9	20 10	18 9	
Duty cycle	%	25	25	25	25	15	
Push/pull max.	N	1700	2600	4500	6800	10000	
Full load speed	mm/s	49	29	17	13	8	
No load speed	mm/s	66	40	24	18	11	

ACTUATOR STROKE DATA							C
Stroke length S	mm	100	200	300	400	500	●
Retracted length L	mm	290	390	490	590	690	
Life time no. of single strokes		160000	80000	53000	40000	32000	
Weight	kg	4.8	5.8	6.3	6.8	7.8	

CONTROL OPTIONS		POT
Control platform ¹		Potentiometer
H-bridge		-
Potentiometer output ²		●
Hall signal output		-
EoS signal output ³		●
Soft start/stop		-
Voltage protection		-
Temperature monitoring		-
Action status feedback		-
Current feedback		-
Position feedback		-
Speed/ramp feedback		-
Error code feedback		-

ACTUATOR PERFORMANCE GRAPHS 12 V | 24 V



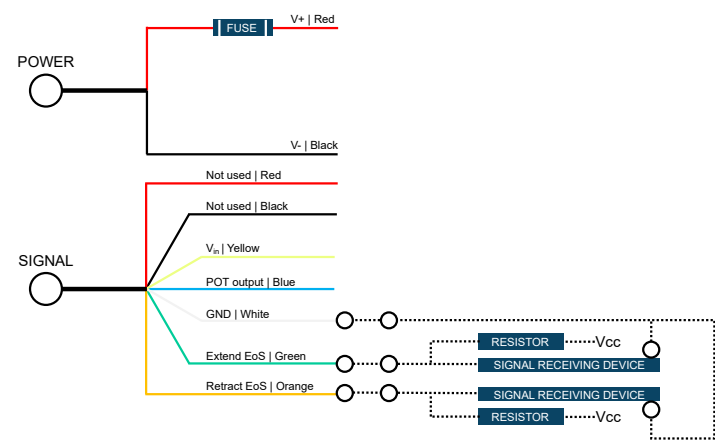
ACTUATOR FEATURES		C
Motor type ⁴		Brushed DC motor ●
Power cable		AWG14
Signal cable		AWG22
Cable length	mm	500 ●
Screw type		Ball screw
Limit switch		Yes
Over current protection ⁵		Yes
Max. duty operational time	s	60
IP rating		IP69K static IP66 dynamic
EMC		EMC Directive 2014/30/EU
Operating temperature	°C	-40 to 80
Relative humidity ⁶	%	10 to 90
Manufacturing standard		ISO 9001:2015
Performance tolerances	%	± 15
Fuse specification ⁷	A	40 20
Stroke length ⁸	mm	100 to 500 ●

WARNING! It is forbidden to use Pulse Width Modulation (PWM) as input power to DHI as it will cause malfunction and cause permanent damage.

NOTES

- Other control platforms available. See page 9 for more information.
- A wire connection of voltage input (V_{in}) is required. The recommended voltage is 5-32 V DC.
- End of stroke signal output is not potential free. An external 5-24 V power and pull-up resistor are required. (10 kΩ resistor is recommended)
- Brushed DC motor is the standard configuration. Brushless DC motor available as an option. Contact us for more information.
- Over current protection specifications 25 A at 12 V DC and 12.5 A at 24 V DC, actuator will be stopped automatically. Over current protection is only applicable in emergency situations. It should not be used for the normal routine stopping needs of the actuator, as this may cause permanent damage.
- Non-condensing.
- 40 A for 12 V and 20 A for 24 V.
- Contact us for stroke lengths above 500 mm.

ACTUATOR WIRING DIAGRAM POT C



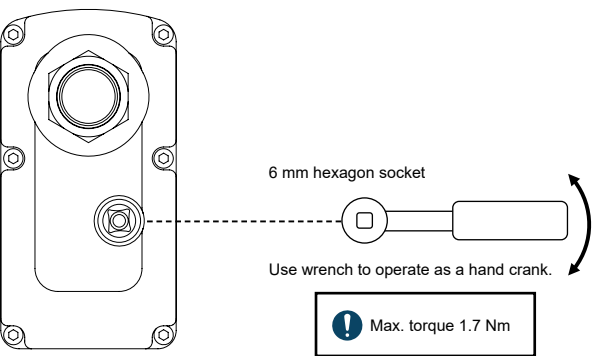
ACTUATOR WIRING CONFIGURATION POT

Wire	Symbol	Description
Red	V+	Connect red wire to "V+" and black wire to "V-" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
Black	V-	Input voltage is according to actuator voltage specification.
Red	Not used	-
Black	Not used	-
Yellow	V _{in}	The recommended voltage is 5 ~ 32 V.
Blue	POT	Potentiometer specification is 10 KΩ, 10 turns, tolerance ±5 %. The potential value can be measured through the POT output and GND wires.
White	GND	Signal GND. Both for POT output and customer signal receiving device.
Green	Extend EoS Output	Input voltage V _{cc} = 5 ~ 24 V.
Orange	Retract EoS Output	Signal voltage during stroke = GND (Normally closed circuit). End of stroke signal voltage = V _{cc} (Open circuit).

POTENTIOMETER RESOLUTION POT C

Stroke length	mm	100 to 450	> 450
Resolution	Ω/mm	20	9.8

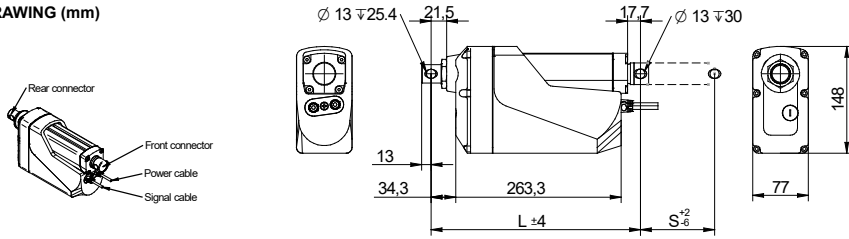
MANUAL OPERATION FUNCTION | HAND CRANK



HAND CRANK SPECIFICATION

Gear ratio		5:1	10:1	15:1	20:1	30:1
Distance per crank revolution	mm	2.2	1.3	0.80	0.61	0.39

DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION

DHI - VOLTAGE - GEAR RATIO - B - STROKE LENGTH - HS2 - IP69K

Example: DHI-12-5-B-100-HS2-IP69K

ACCESSORIES



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ACTUATOR DATA

		5:1	10:1	15:1	20:1	30:1	C
Gear ratio		5:1	10:1	15:1	20:1	30:1	●
Voltage	V	12 24	12 24	12 24	12 24	12 24	
No load current	A	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	
Full load current	A	18 9	18 9	18 9	20 10	18 9	
Duty cycle	%	25	25	25	25	15	
Push/pull max.	N	1700	2600	4500	6800	10000	
Full load speed	mm/s	49	29	17	13	8	
No load speed	mm/s	66	40	24	18	11	

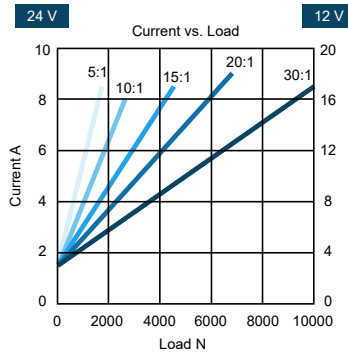
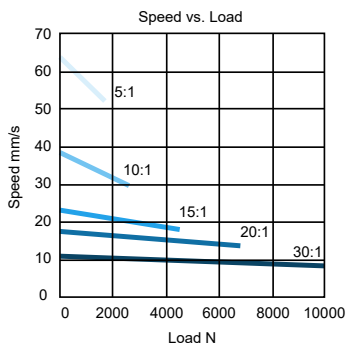
ACTUATOR STROKE DATA

		100	200	300	400	500	C
Stroke length S	mm	100	200	300	400	500	●
Retracted length L	mm	290	390	490	590	690	
Life time no. of single strokes		160000	80000	53000	40000	32000	
Weight	kg	4.8	5.8	6.3	6.8	7.8	

CONTROL OPTIONS

	HS2
Control platform ¹	Dual hall sensor
H-bridge	-
Potentiometer output	-
Hall signal output	●
EoS signal output ²	●
Soft start/stop	-
Voltage protection	-
Temperature monitoring	-
Action status feedback	-
Current feedback	-
Position feedback	-
Speed/ramp feedback	-
Error code feedback	-

ACTUATOR PERFORMANCE GRAPHS 12 V | 24 V



ACTUATOR FEATURES

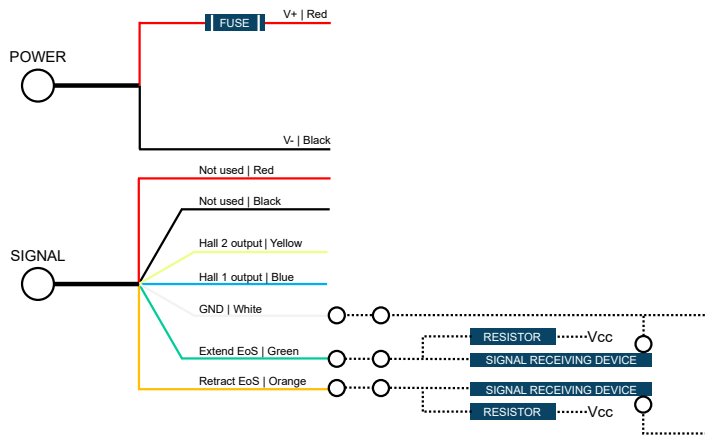
			C
Motor type ³		Brushed DC motor	●
Power cable		AWG14	
Signal cable		AWG22	
Cable length	mm	500	●
Screw type		Ball screw	
Limit switch		Yes	
Over current protection ⁴		Yes	
Max. duty operational time	s	60	
IP rating		IP69K static IP66 dynamic	
EMC		EMC Directive 2014/30/EU	
Operating temperature	°C	-40 to 80	
Relative humidity ⁵	%	10 to 90	
Manufacturing standard		ISO 9001:2015	
Performance tolerances	%	± 15	
Fuse specification ⁶	A	40 20	
Stroke length ⁷	mm	100 to 500	●

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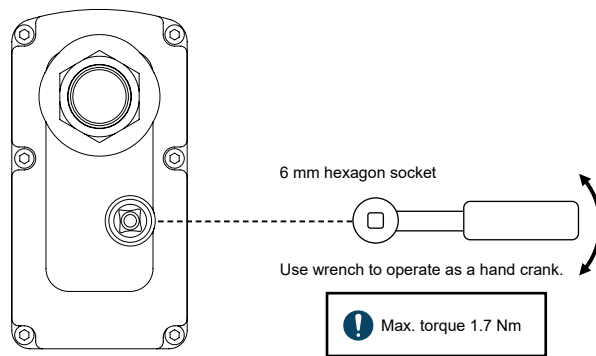
NOTES

- Other control platforms available. See page 9 for more information.
- End of stroke signal output is not potential free. An external 5~24 V power and pull-up resistor are required. (10 kΩ resistor is recommended)
- Brushed DC motor is the standard configuration. Brushless DC motor available as an option. Contact us for more information.
- Over current protection specifications 25 A at 12 V DC and 12.5 A at 24 V DC, actuator will be stopped automatically. Over current protection is only applicable in emergency situations. It should not be used for the normal routine stopping needs of the actuator, as this may cause permanent damage.
- Non-condensing.
- 40 A for 12 V and 20 A for 24 V.
- Contact us for stroke lengths above 500 mm.

ACTUATOR WIRING DIAGRAM HS2 C



MANUAL OPERATION FUNCTION | HAND CRANK



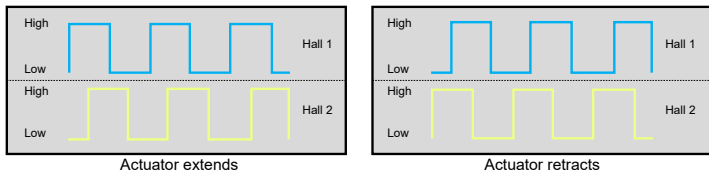
HAND CRANK SPECIFICATION

Gear ratio		5:1	10:1	15:1	20:1	30:1
Distance per crank revolution	mm	2.2	1.3	0.80	0.61	0.39

ACTUATOR WIRING CONFIGURATION HS2

Wire	Symbol	Description
Red	V+	Connect red wire to "V+" and black wire to "V-" of DC power to extend the actuator. Switch the polarity of DC input to retract it.
Black	V-	Input voltage is according to actuator voltage specification.
Red	Not used	-
Black	Not used	-
Yellow	Hall 2 output	$V_{out_High} = V+ (DC Power) - 1.2 V, I_{max} 12.7 mA$
Blue	Hall 1 output	$V_{out_Low} = GND$
White	GND	Signal GND. Both for Hall output and customer signal receiving device.
Green	Extend EoS Output	Input voltage $V_{cc} = 5 \sim 24 V$.
Orange	Retract EoS Output	Signal voltage during stroke = GND (Normally closed circuit). End of stroke signal voltage = Vcc (Open circuit).

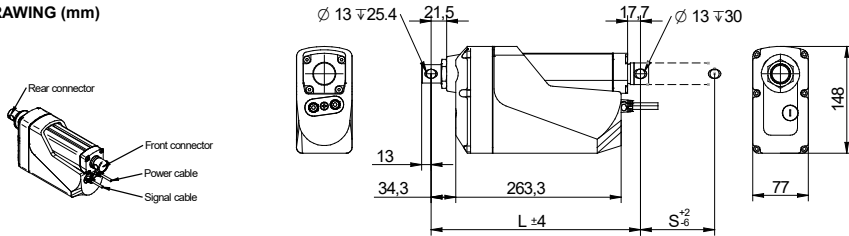
HALL SIGNAL GRAPH HS2



HALL SIGNAL RESOLUTION HS2 C

Gear ratio		5:1	10:1	15:1	20:1	30:1
Resolution	Pulse/mm	1.1	1.8	3.0	3.9	6.2

DRAWING (mm)



PHOTO



MODEL NO. DESIGNATION

DHI - VOLTAGE - GEAR RATIO - B - STROKE LENGTH - CCB - IP69K

Example: DHI-12-5-B-100-CCB-IP69K

ACCESSORIES



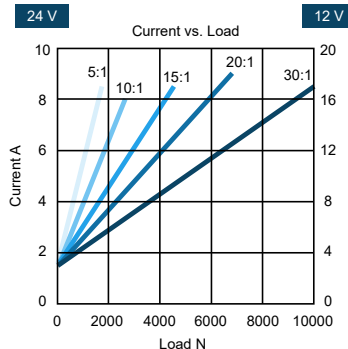
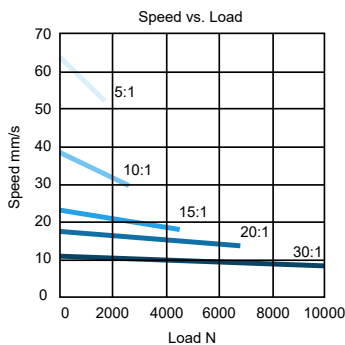
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ACTUATOR DATA							C
Gear ratio		5:1	10:1	15:1	20:1	30:1	●
Voltage	V	12 24	12 24	12 24	12 24	12 24	
No load current	A	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	3.0 1.5	
Full load current	A	18 9	18 9	18 9	20 10	18 9	
Duty cycle	%	25	25	25	25	15	
Push/pull max.	N	1700	2600	4500	6800	10000	
Full load speed	mm/s	49	29	17	13	8	
No load speed	mm/s	66	40	24	18	11	

ACTUATOR STROKE DATA							C
Stroke length S	mm	100	200	300	400	500	●
Retracted length L	mm	290	390	490	590	690	
Life time no. of single strokes		160000	80000	53000	40000	32000	
Weight	kg	4.8	5.8	6.3	6.8	7.8	

CONTROL OPTIONS		CCB
Control platform ¹		Canbus J1939
H-bridge ²		●
Potentiometer output		-
Hall signal output		●
EoS signal output ³		●
Soft start/stop		●
Voltage protection ⁴		●
Temperature monitoring ⁵		●
Action status feedback		●
Current feedback		●
Position feedback		●
Speed/ramp feedback		●
Error code feedback		●

ACTUATOR PERFORMANCE GRAPHS 12 V | 24 V



ACTUATOR FEATURES			C
Motor type ⁶		Brushed DC motor	●
Power cable		AWG14	
Signal cable		AWG22	
Cable length	mm	500	●
Screw type		Ball screw	
Limit switch		Yes	
Over current protection ⁷		Yes	
Max. duty operational time	s	60	
IP rating		IP69K static IP66 dynamic	
EMC		EMC Directive 2014/30/EU	
Operating temperature	°C	-40 to 80	
Relative humidity ⁸	%	10 to 90	
Manufacturing standard		ISO 9001:2015	
Performance tolerances	%	± 15	
Fuse specification ⁹	A	40 20	
Stroke length ¹⁰	mm	100 to 500	●

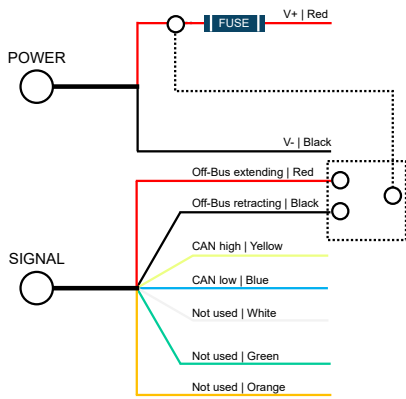
WARNING! It is forbidden to use Pulse Width Modulation (PWM) as input power to DHI as it will cause malfunction and cause permanent damage.

NOTES

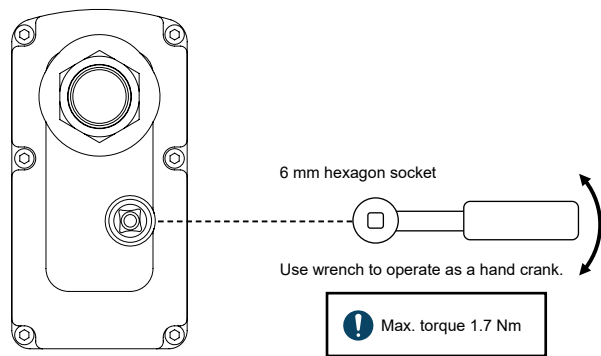
- Other control platforms available. See page 9 for more information.
- The polarity of input DC power for the signal control options must be fixed and cannot be switched.
- End of stroke signal output is not potential free. An external 5-24 V power and pull-up resistor are required. (10 kΩ resistor is recommended)
- Voltage protection: The allowable input voltage is 9-16 V at 12 V DC and 18-32 V at 24 V DC. If it exceeds this range, the actuator will be stopped automatically.
- When it is detected that the temperature is lower than 0°C, the overcurrent protection setting value will be automatically increased by 30 %, which will reduce the over current protection caused by low temperature.
- Brushed DC motor is the standard configuration. Brushless DC motor available as an option. Contact us for more information.
- Over current protection specifications 25 A at 12 V DC and 12.5 A at 24 V DC, actuator will be stopped automatically. Over current protection is only applicable in emergency situations. It should not be used for the normal routine stopping needs of the actuator, as this may cause permanent damage.
- Non-condensing.
- 40 A for 12 V and 20 A for 24 V.
- Contact us for stroke lengths above 500 mm.

ACTUATOR WIRING DIAGRAM CCB

C



MANUAL OPERATION FUNCTION | HAND CRANK



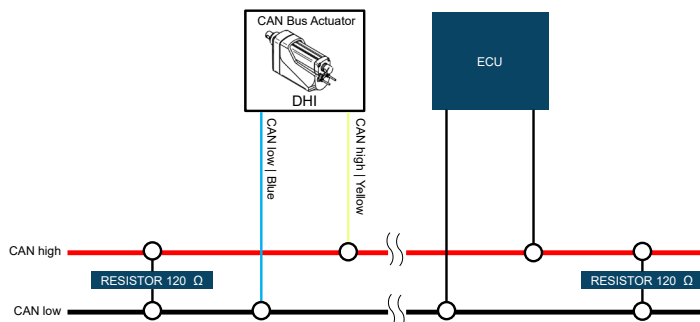
ACTUATOR WIRING CONFIGURATION CCB

Wire	Symbol	Description
Red	V+	Connect Red to positive. Connect Black to negative. Do not swap the polarity.
Black	V-	Input voltage: 9 ~ 16V at 12 V DC, 18 ~ 32 V at 24 V DC
Red	Off-Bus extending	-
Black	Off-Bus retracting	-
Yellow	CAN high	Vout High = V+ (DC Power) - 1.2 V, I _{max} 12.7 mA Vout Low = GND
Blue	CAN low	-
White	GND	-
Green	Not used	-
Orange	Not used	-

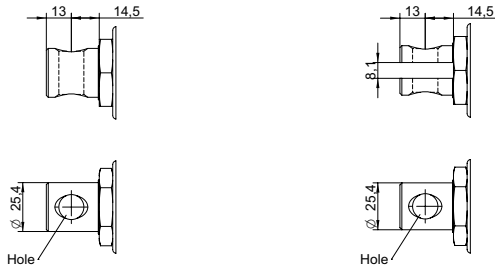
HAND CRANK SPECIFICATION

Gear ratio	5:1	10:1	15:1	20:1	30:1
Distance per crank revolution mm	2.2	1.3	0.80	0.61	0.39

WIRING DIAGRAM SAE J1939 SYSTEM



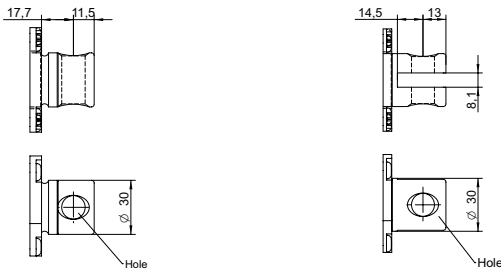
ACTUATOR REAR CONNECTOR OPTIONS



ACTUATOR REAR CONNECTOR OPTIONS DATA¹

Connector type	Metal solid Metal slot	C
Hole diameter	mm 12.2 13	
Description	Contact us for more information.	

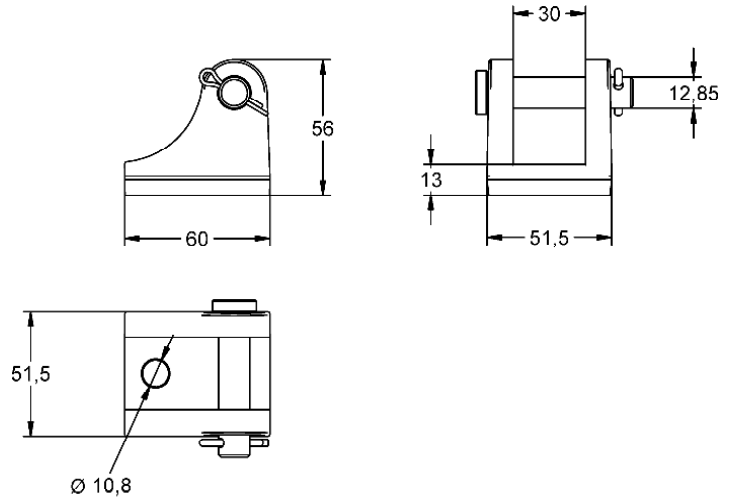
ACTUATOR FRONT CONNECTOR OPTIONS



ACTUATOR FRONT CONNECTOR OPTIONS DATA¹

Connector type	Metal solid Metal slot	C
Hole diameter	mm 12.2 13	
Description	Contact us for more information.	

MOUNTING BRACKET DRAWING ALA-13



MOUNTING BRACKET SPECIFICATION ALA-13

Model name	ALA-13
Max. load	N 17000
Material	SUS304 Stainless Steel
Weight	kg 0.55

CONTROL OPTIONS	POT ²	HS2 ²	CCB ²	NO ³	CNO ³	CPOT ³	CHS2 ²	C
H-bridge	-	-	●	-	●	●	●	
Potentiometer output	●	-	-	-	-	●	-	
Hall signal output	-	●	●	-	-	-	●	
EoS signal output	●	●	●	●	●	●	●	
Soft start/stop	-	-	●	-	●	●	●	
Voltage protection	-	-	●	-	●	●	●	
Temperature monitoring	-	-	●	-	●	●	●	
Action status feedback	-	-	●	-	-	-	-	
Current feedback	-	-	●	-	-	-	-	
Position feedback	-	-	●	-	-	-	-	
Speed/ramp feedback	-	-	●	-	-	-	-	
Error code feedback	-	-	●	-	-	-	-	

NOTES

- Standard configuration is metal solid, hole diameter 13 mm.
- Standard configuration, see separate datasheet on www.transmotec.se.
- Custom control option, contact us for more information.