

RT05 Series Single-axis Heavy Duty Joysticks

Product Features

- Single axis control;
- Inside with Hall Effect sensor;
- Resistant to oil, maritime climate, ozone and UV radiation;
- Mechanical spring-return to center or Friction-hold operation;
- Excellent analog proportional control, CANbus 2.0 or RS232 signal output;
- Easy to install, flexible operation, uniform texture, maintenance-free;
- CE approved, RoHS 2011/65/EU, Annex II, including (EU) 2015/863 compliant.

Application

RunnTech 05 series robust industrial joystick controller is designed for hydraulic proportional control and variable frequency motor control, such as Construction machinery, Precision machine, Military robotics, Refuse handling trucks, offshore, Rotary drilling rigs, Cranes, Marine etc. Available in one, two or three axis configurations, this joystick can be supplied with non-contact Hall effect sensors or long life potentiometer tracks.


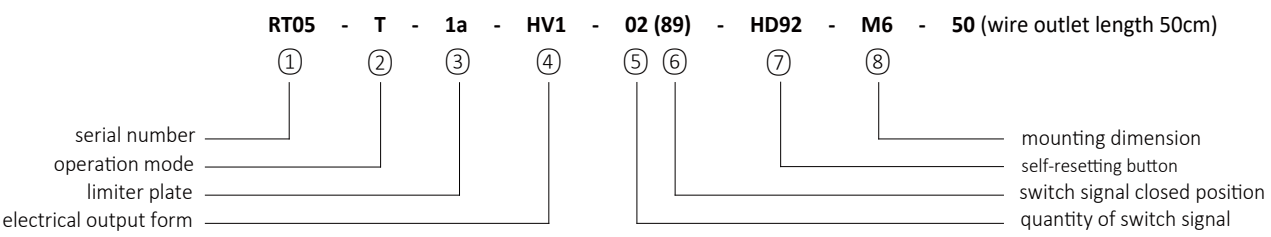


Technical Information

Environment Parameter		
Storage Temperature	-50°C...+80°C	
Operating Temperature	-40°C...+80°C	
Protection Grade	IP64	
Vibration	Amplitude±3g, Frequency: 10Hz-200Hz	
Impact	20g, 6ms, Semi-sinusoidal	
EMC Anti-interference Rank	100V/m, 30MHz to 1GHz, 80% sine-wave modulation, meet EN50082-2 (1995) standard	
EMC Emission Rank	Rank B, 150KHz to 30MHz, meet EN50081-2 (1993) standard	
ESD Anti-interference Rank	Rank 4, 8KV contact discharge, 15KV air discharge, meet IEC61000-4-2 standard	
Mechanical Parameter		
Mechanical Angle	Hall sensor: ±25°	
Operating Torque	12N (50N max)	
Mechanical Life	5 million	
Mechanical Error	± 0.5°	
Electrical Parameter		
Hall Sensor	Power Supply Voltage	5±0.5V DC
	Power Supply Current Consumption	6.5mA/hall sensor

Hall Sensor	Resolution Ratio	infinite
	Maximum Voltage	15VDC
	Reversed Polarity Maximum Voltage	14.5VDC
	Load Resistance	5KΩ
	Median Voltage (no-load)	48 - 52%Vs

Product Configuration

No.	Item	Content	
1	Serial Number	RT05 Series Single-axis Heavy Duty Joysticks Controller	
2	Operation Mode	M - friction hold (1b, 1c and 1d with spring return to 0 position)	
3	Limiter Plate		
4	Electrical Output Form	Analog Output	HV1: DC 5V, 0...2.5...5V (rail to rail)
			HV2: DC 5V, 0.5...2.5...4.5V
			HV3: DC 5V, 1.0...2.5...4.0V
			HV4: DC 5V, 1.25...2.5...3.75V
			V1(H): 9...32V, -10V...0...+10V (voltage output)
			V2(H): 9...32V, +10V...0...+10V (voltage output)
			V3(H): 9...32V, -5V...0...+5V (voltage output)
			V4(H): 9...32V, +5V...0...+5V (voltage output)
			V5(H): 9...32V, 0...+10V (voltage output)
			V6(H): 9...32V, 0...+5V (voltage output)
			I1(H): 4 wire 4mA...12mA...20mA (current output)
		I2(H): 4 wire 20mA...4mA...20mA (current output)	
		Digital Output	CAN2.0 output
			RS485 output
PWM output			
5	Quantity of Switch Signal	01, 02 or 03 (the quantity of directional switch signal in each axis)	
6	Switch Signal Closed Position	Refer to Table 4-3 Directional Switch Signal Closed Position (Page 09)	
7	Handle Grip Style	HD8, HD9, HD10, HD11, HD26, HD92 and HD93 (Page 03...07)	
8	Mounting Dimensions	M6: 76x76, central hole 92	
<p style="text-align: center;">RT05 - T - 1a - HV1 - 02 (89) - HD92 - M6 - 50 (wire outlet length 50cm)</p> 			

Product Installation

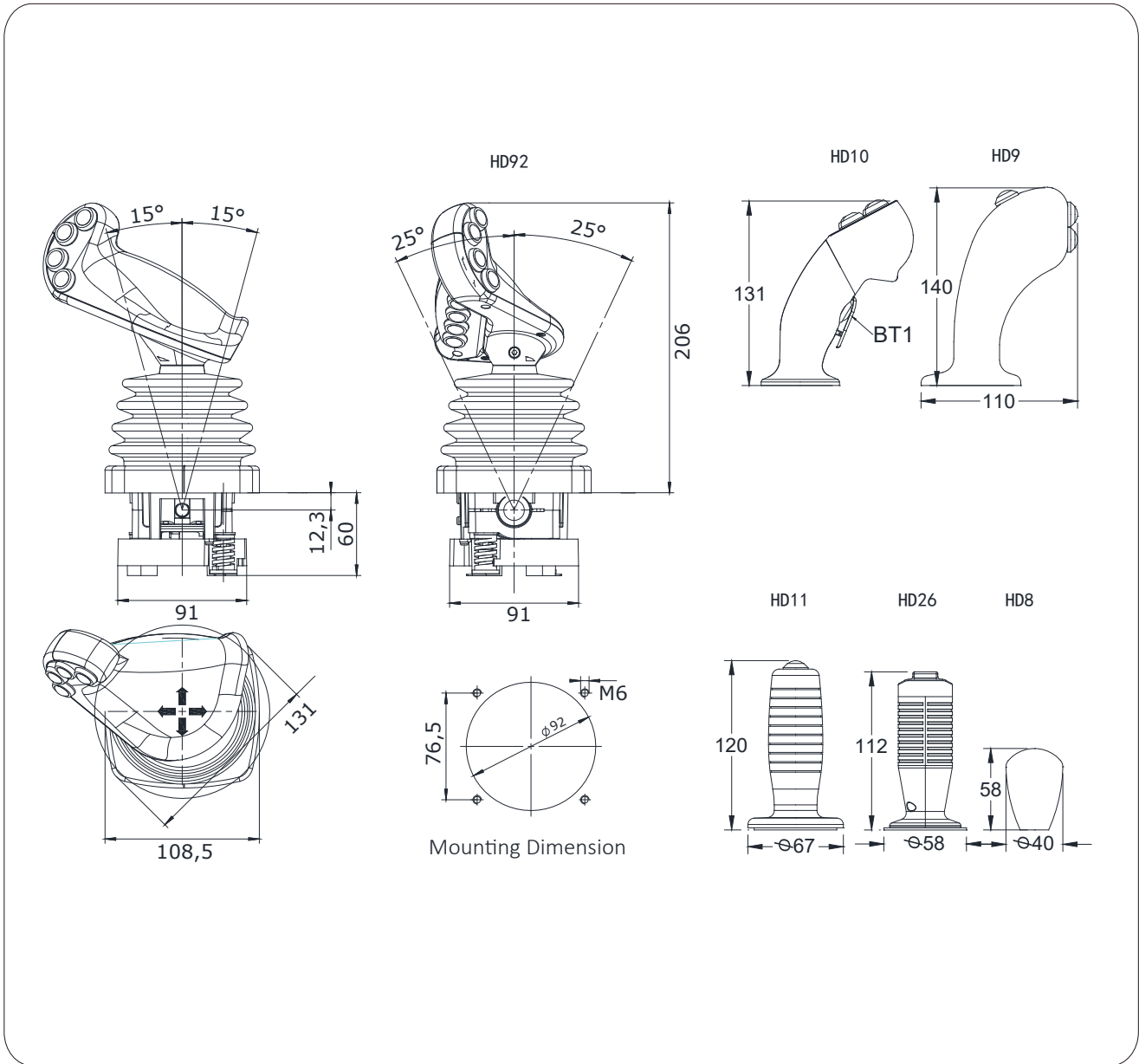


Table 1-4 Handle HD9

<h1>HD9 Handle</h1>				
	<p>HD9 handle can be installed with a variety of accessories: self-lock button and self-resetting button.</p> <p>We also can customize special technical parameters to meet your requirements.</p> <p>HD9 handle use PA66 + 305GF, to achieve excellent high temperature performance and can be installed in RT300 or RT02 series joysticks to achieve multi-axis control.</p> <p>Operation Temperature: -40-85 °C Storage Temperature: -40-85 °C Meet IEC68 part 2-20 Protection Grade: IP64/65</p>			
				
<p>HD9 - BT 2 ⑤⑦ R BS 2 ④⑥ G</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%; vertical-align: top;"> <p>handle type</p> <p>button type (momentary or maintained)</p> <p>button quantity</p> <p>button location</p> <p>button color</p> </td> <td style="width: 40%; border: none; vertical-align: top;"> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> </td> <td style="width: 30%; vertical-align: top;"> <p>button color</p> <p>button location</p> <p>button quantity</p> <p>button type (momentary or maintained)</p> </td> </tr> </table>		<p>handle type</p> <p>button type (momentary or maintained)</p> <p>button quantity</p> <p>button location</p> <p>button color</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>button color</p> <p>button location</p> <p>button quantity</p> <p>button type (momentary or maintained)</p>
<p>handle type</p> <p>button type (momentary or maintained)</p> <p>button quantity</p> <p>button location</p> <p>button color</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>button color</p> <p>button location</p> <p>button quantity</p> <p>button type (momentary or maintained)</p>		

button selection reference Table 2-1

Table 1-5 Handle HD10

<h1 style="text-align: center;">HD10 Handle</h1>		
	<p>HD10 handle is ergonomically designed to provide a high degree of comfort, highly integrated, the handle can be installed with a variety of accessories: self-resetting (momentary) push button, self-locking push button, analog thumbwheel controller (W100) or rocker switch (QTOT).</p> <p>We also can customize special technical parameters to meet your requirements.</p> <p>HD10 handle use PA66 + 305GF, to achieve excellent high temperature performance and can be installed in RT100, RT200, RT300 RT01 or RT02 series joysticks to achieve multi-axis control.</p> <p>Operation Temperature: -40-85 C Storage Temperature: -40-85 C Meet IEC68 part 2-20 Protection Grade: IP64/65</p>	
		
Model Selection	Style	Description
HD10a		without Deadman trigger
HD10b		with Deadman trigger

Table 1-6 Handle HD10 Panel Layout

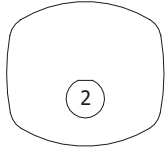
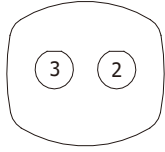
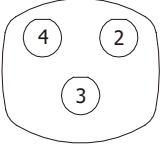
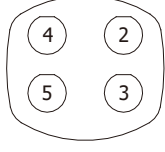
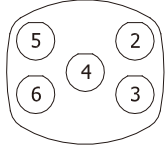
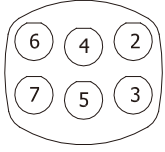
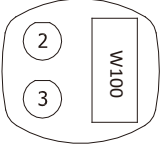
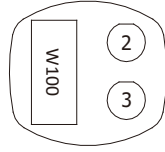
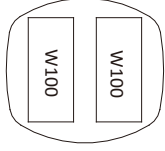
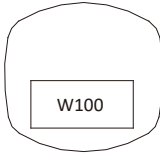
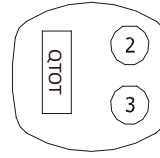
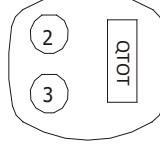
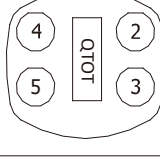
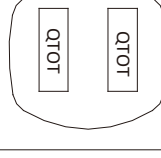
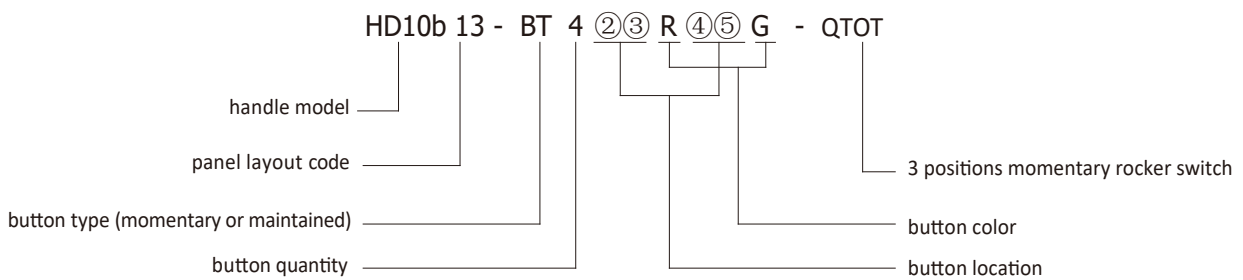
Layout Code	Layout	Description (all functions selection refer to the Table 2-1)
1		1 momentary button (BT) / maintained button (BS)
2		2 momentary button (BT) / maintained button (BS)
3		3 momentary button (BT) / maintained button (BS)
4		4 momentary button (BT) / maintained button (BS)
5		5 momentary button (BT) / maintained button (BS)
6		6 momentary button (BT) / maintained button (BS)
7		1 proportional thumbwheel (W100) and 2 momentary button (BT) / maintained button (BS)
8		1 proportional thumbwheel (W100) and 2 momentary button (BT) / maintained button (BS)
9		2 proportional thumbwheel controller (W100)

Table 1-6 Handle HD10 Panel Layout

Layout Code	Layout	Description (all functions selection reference Table 2-1)
10		1 proportional thumbwheel controller (W100)
11		1 rocker switch (QTOT) and 2 momentary button (BT) / maintained button (BS)
12		1 rocker switch (QTOT) and 2 momentary button (BT) / maintained button (BS)
13		1 rocker switch (QTOT) and 4 momentary button (BT) / maintained button (BS)
14		2 rocker switch (QTOT)

* we also can customize special panel layout.



button selection refer to Table 2-1

Table 2-1 Accessories

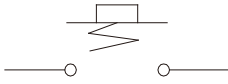
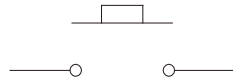
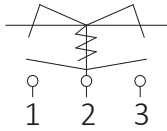
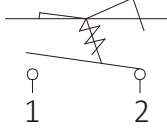
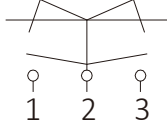
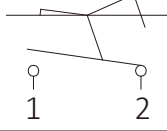
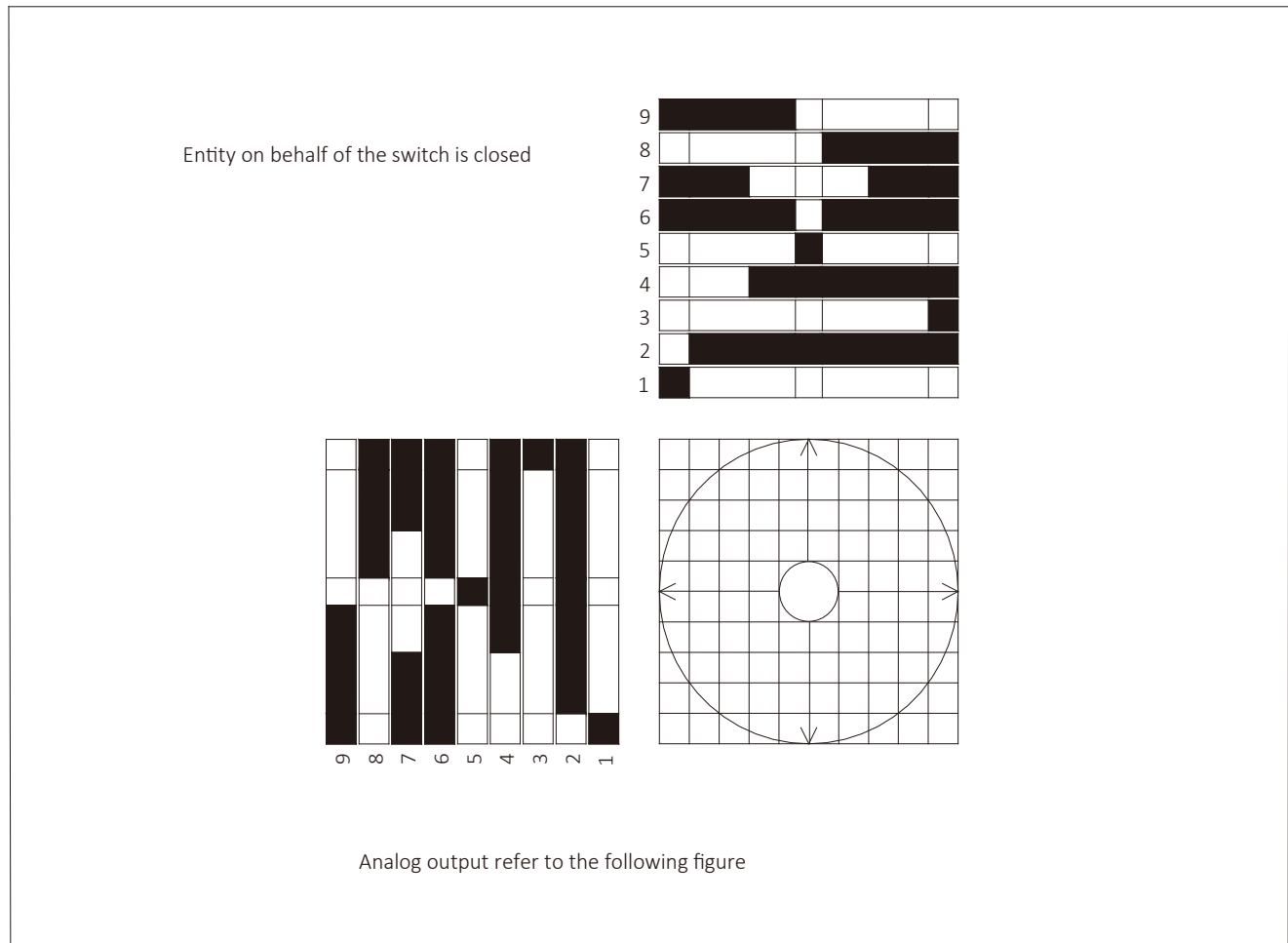
No.	Type	Description	Parameter	Remark
1	BT	momentary button 	24V2A	button color: Red - R Blue - BU Black - BK Yellow - Y Green - G White - W
2	BS	maintained button 	24V2A	button color: Red - R Blue - BU Yellow - Y Green - G
3	QTOT	3 positions momentary rocker switch 	3 pins 250V15A	
4	QTO	2 positions momentary rocker switch 	2 pins 250V15A	
5	QSOS	3 positions maintained rocker switch 	3 pins 250V15A	
6	QSO	2 positions maintained rocker switch 	2 pins 250V15A	
7	QSOT	3 positions, one side momentary another side maintained rocker switch	3 pins 250V15A	
8	W100	proportional thumbwheel (Hall Sensor)	input 5V DC	Please keep far away from the magnetic object

Table 4-3 Directional Switch Signal Closed Position



Electrical Output Form	Analog Output	HV1: DC 5V, 0...2.5...5V (rail to rail)
		HV2: DC 5V, 0.5...2.5...4.5V
		HV3: DC 5V, 1.0...2.5...4.0V
		HV4: DC 5V, 1.25...2.5...3.75V
		V1(H): 9...32V, -10V...0...+10V (voltage output)
		V2(H): 9...32V, +10V...0...+10V (voltage output)
		V3(H): 9...32V, -5V...0...+5V (voltage output)
		V4(H): 9...32V, +5V...0...+5V (voltage output)
		V5(H): 9...32V, 0...+10V (voltage output)
		V6(H): 9...32V, 0...+5V (voltage output)
		I1(H): 4 wire 4mA...12mA...20mA (current output)
		I2(H): 4 wire 20mA...4mA...20mA (current output)
	Digital Output	CAN2.0 output
		RS485 output
PWM output		