

RT01 Cobra-head Shaped Joystick

Product Features

- Single axis, dual axis or 3 axis control;
- Potentiometer sensor or Hall effect sensor;
- Available with various shape multifunction grips;
- Mechanical spring-return to center or Friction-hold operation;
- Excellent analog proportional control output or switch 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 01 series Cobra-head shaped joystick controller is mainly used in hydraulic proportional control, variable frequency motor control, remote control or electro-hydraulic applications such as Rotary table (drilling rig), Crane, Aerial work platforms, Forklift trucks, Mobile hydraulics, Shield tunneling machine, Hoist, Marine, Construction machinery, Civil engineering, Military vehicles, Cabin vehicles, Military robotics, Precision machine tools, Material handling equipment, etc.

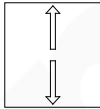
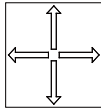
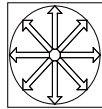


Technical Information

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	Potentiometer: ±32°, Hall sensor: ±20°	
Operating Torque	5N (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
Potentiometer	Power Supply Voltage	DC24V
	Power Supply Current	<20mA
	Resolution Ratio	infinite
	Resistance (10%)	5KΩ and 10KΩ
	Electrical Angle	±32°
	Output Voltage Range (relative voltage)	0...100%; 10...90%
	Median Voltage	48%...52%
	Potentiometer Maximum Load Voltage	32VDC
	Maximum Power Consumption (25°C)	0.25W
	Switch Direction	switch position ±3°

Product Configuration

No.	Item	Content
1	Serial Number	RT01 series cobra-head shaped joystick controller
2	Operation Mode	T - spring return M - friction hold (only single axis)
3	Limiter Plate	   1 - Y axis 2 - Y/X axis cross direction 3 - Y/X axis full direction
4	Electrical Output Form	Hall Sensor <ul style="list-style-type: none"> 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
		Potentiometer <ul style="list-style-type: none"> P1: Simple 2 directions output (potentiometer with dead zone) P2: Simple 1 direction output (potentiometer without dead zone) V1: DC24V, -10V...0...+10V (voltage output) V2: DC24V, +10V...0...+10V (voltage output) V3: DC24V, -5V...0...+5V (voltage output) V4: DC24V, +5V...0...+5V (voltage output) V5: DC24V, 0...+10V (voltage output) V6: DC24V, 0...+5V (voltage output) I1: 4 wire 4mA...12mA...20mA (current output) I2: 4 wire 20mA...4mA...20mA (current output)
5	Potentiometer Type	1K, 2K, 5K, 10K, 20K or H (Hall sensor)

6	Quantity of Switch Signal	01, 02 or 03 (the quantity of directional switch signal in each axis)
7	Switch Signal Closed Position	Refer to Table 4-3 Directional Switch Signal Closed Position (Page 08)
8	Handle Grip Style	HD7, HD8, HD10 and HD80 (Page 03...06)
9	Mounting Dimensions	M4 : 64x64, central hole 83

RT01 - T - 2 - P1 (10K) - 02 (89) - HD10b4-BT2③⑤RBS2②④Y - M4 - 50 (wire outlet length 50cm)

① serial number
 ② operation mode
 ③ limiter plate
 ④ electrical output form
 ⑤ potentiometer type
 ⑥ wire outlet length
 ⑦ mounting dimension
 ⑧ button location
 ⑨ handle grip style
 ⑩ switch signal closed position
 ⑪ quantity of switch signal

Product Installation

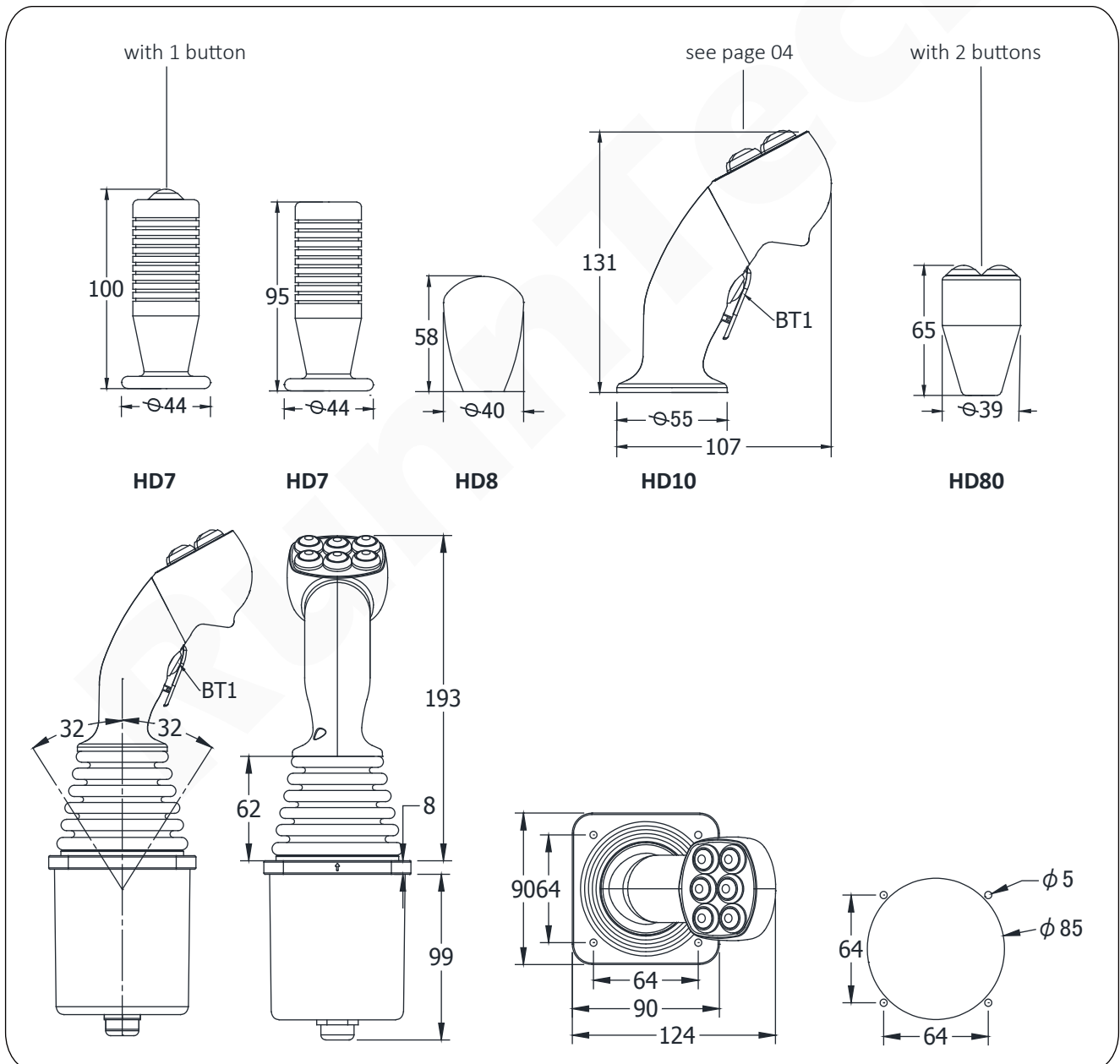


Table 1-5 Handle HD10

HD10 Handle

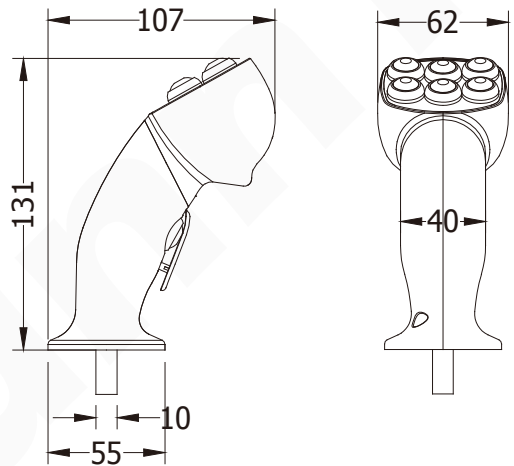


HD10 handle is ergonomically designed to provide a high degree of comfort, highly integrated, the handle can be installed with a variety of accessories: self-resetting (momentary) push button, self-locking push button, analog thumbwheel controller (W100) or rocker switch (QTOT).

We also can customize special technical parameters to meet your requirements.

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.

Operation Temperature: -40-85 C
 Storage Temperature: -40-85 C
 Meet IEC68 part 2-20
 Protection Grade: IP64/65



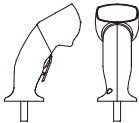
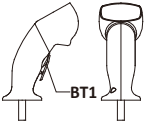
Model Selection	Style	Description
HD10a		without Deadman trigger
HD10b		with Deadman trigger

Table 1-6 Handle HD10 Panel Layout

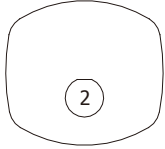
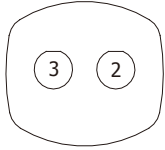
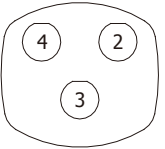
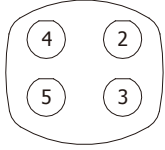
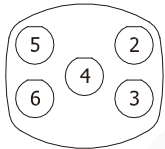
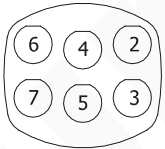
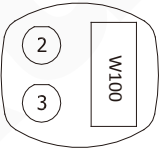
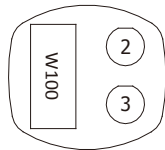
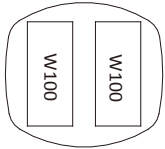
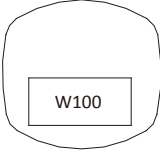
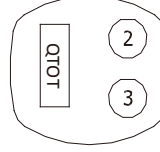
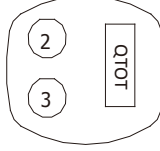
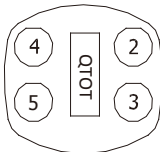
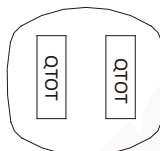
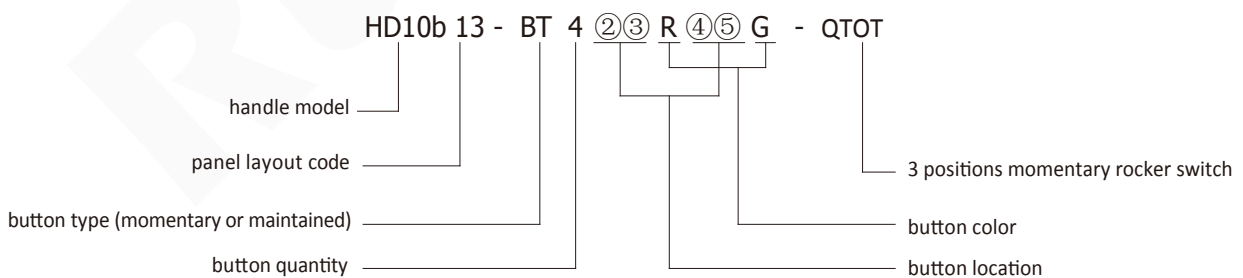
Layout Code	Layout	Description (all functions selection refer to the Table 2-1)
1		1 momentary button (BT) / maintained button (BS)
2		2 momentary button (BT) / maintained button (BS)
3		3 momentary button (BT) / maintained button (BS)
4		4 momentary button (BT) / maintained button (BS)
5		5 momentary 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

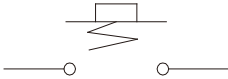
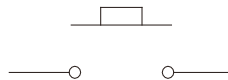
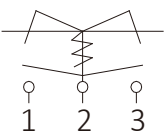
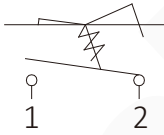
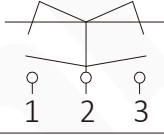
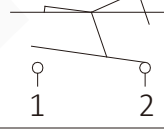
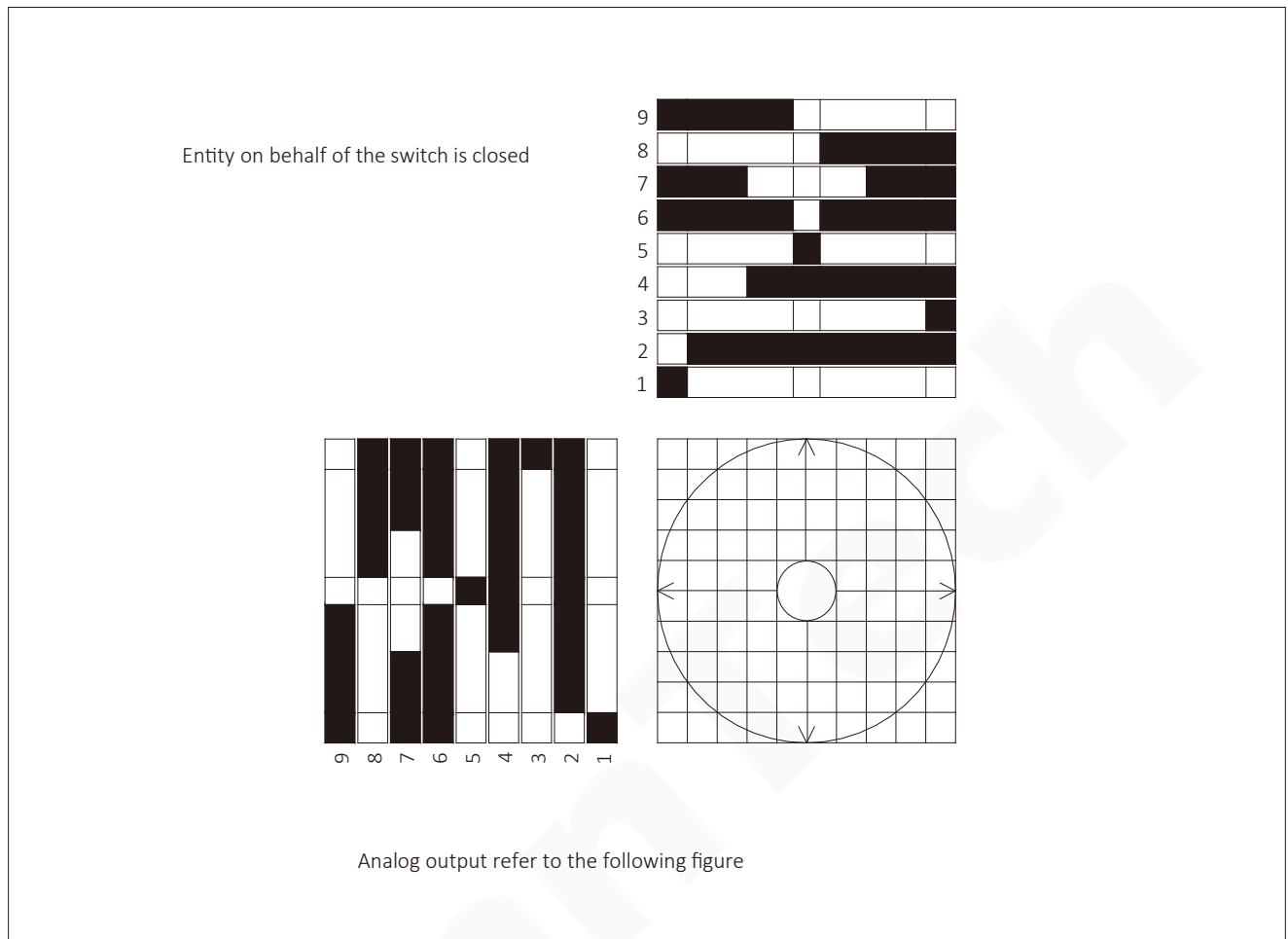
No.	Type	Description	Parameter	Remark
1	BT	momentary button 	24V2A	button color : Red - R Blue - BU Black - BK Yellow - Y Green - G White - W
2	BS	maintained button 	24V2A	button color : Red - R Blue - BU Yellow - Y Green - G
3	QTOT	3 positions momentary rocker switch 	3 pins 250V15A	
4	QTO	2 positions 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	Hall Sensor	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
	Potentiometer	P1: Simple 2 directions output (potentiometer with dead zone)
		P2: Simple 1 direction output (potentiometer without dead zone)
		V1: DC24V, -10V...0...+10V (voltage output)
		V2: DC24V, +10V...0...+10V (voltage output)
		V3: DC24V, -5V...0...+5V (voltage output)
		V4: DC24V, +5V...0...+5V (voltage output)
		V5: DC24V, 0...+10V (voltage output)
		V6: DC24V, 0...+5V (voltage output)
I1: 4 wire 4mA...12mA...20mA (current output)		
I2: 4 wire 20mA...4mA...20mA (current output)		