

# AJ3 Joystick for Heavy Duty Applications



The AJ3 Joystick provides the reliability required in demanding environmental conditions such as heavy duty industrial applications.

The high mechanical strength of the shaft and the unique sensing design make the joystick ideal for rigorous use in rugged, harsh environments.

The AJ3 Joystick is designed to accommodate standard and custom-designed grips.

## Standard Features

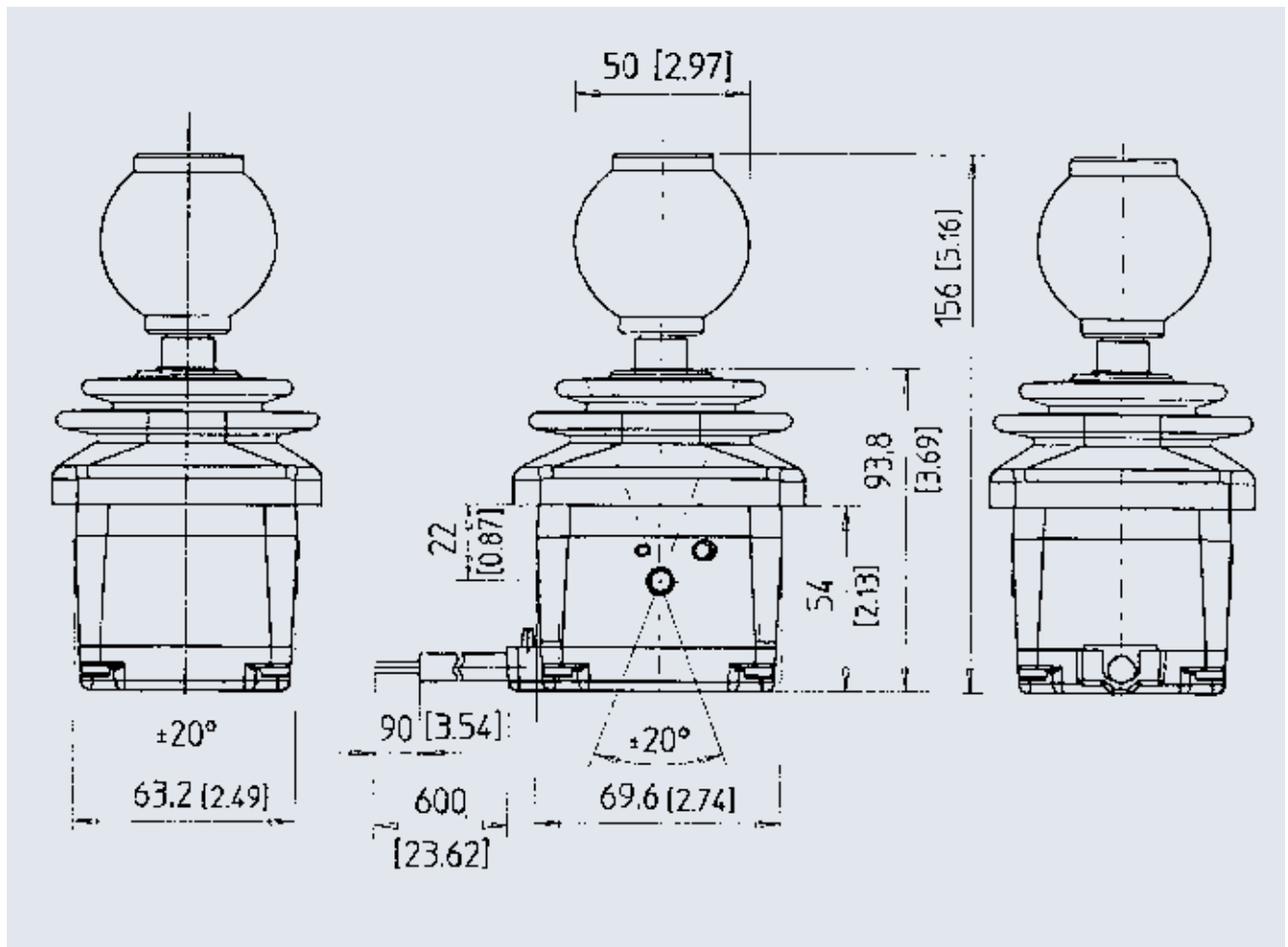
- Contactless sensing
- Life greater than 5 million cycles
- 2 sensors per axis
- Integrated temperature compensation

## Optional Features

- Output characteristics
- PWM frequency
- Operating force
- Lever deflection angle
- Gate pattern
- Over travel function
- Grip

Electrical Data		
Supply Ratings	Voltage range	8V to 30V
	Maximum Current	180 mA at 24V dc
	Maximum output voltage	Vsupply - 2.5V dc
Voltage Output (Maximum output current 5 mA)	VO1	0V to Vsupply - 2.5 V dc
	VO2	0-5V dc
	VO3	0-10V (Ubat min 12.5V) dc
	VO4	3-9V (Ubat min 12.5V) dc
	VO8	0.5-4.5V dc
Current Output	CO1	4-20 mA
PWM Output	PW1	122 Hz
CAN Bus Output	CA1	CAN 2.0A
	CA2	CAN 2.0B
Output Center Position	C2	Voltage (Vsupply)
Other Electrical Characteristics	EMI RFI interface	100 V/m supplied upon request Pig tail 600 mm without connector
Mechanical data		
Life		> 5 million cycles
Operating temperature		-40°C to + 85°C
Operating force (measured 140 mm from pivot point)		4 N
		8 N
		12 N
		16 N
Horizontal load maximum		100 Nm
Vertical load maximum		1000 N
Max. Torque (Z-axis)		20 Nm
Protection level		IP 65 above gate
Gate options		Square, cross, single axis
Lever Deflection X/Y		± 20°
Center position		±2°
Weight		450 g
Housing Boot		Aluminum EPDM

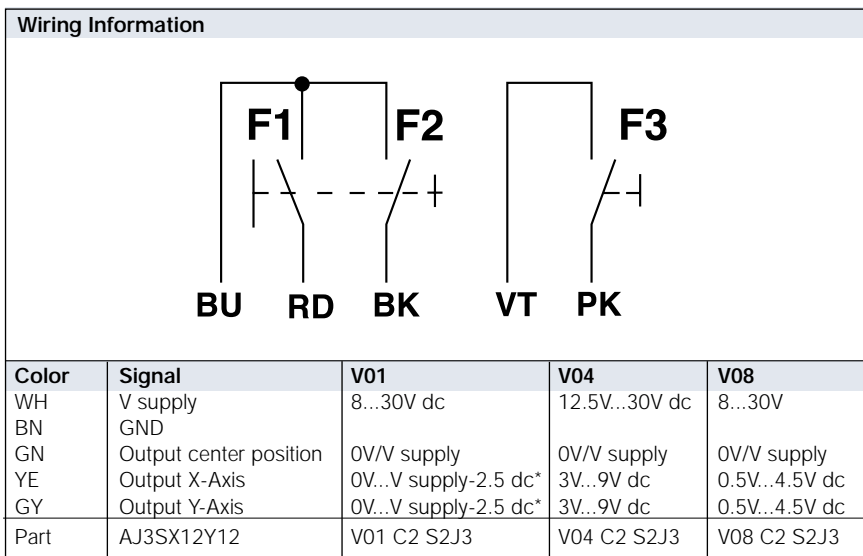
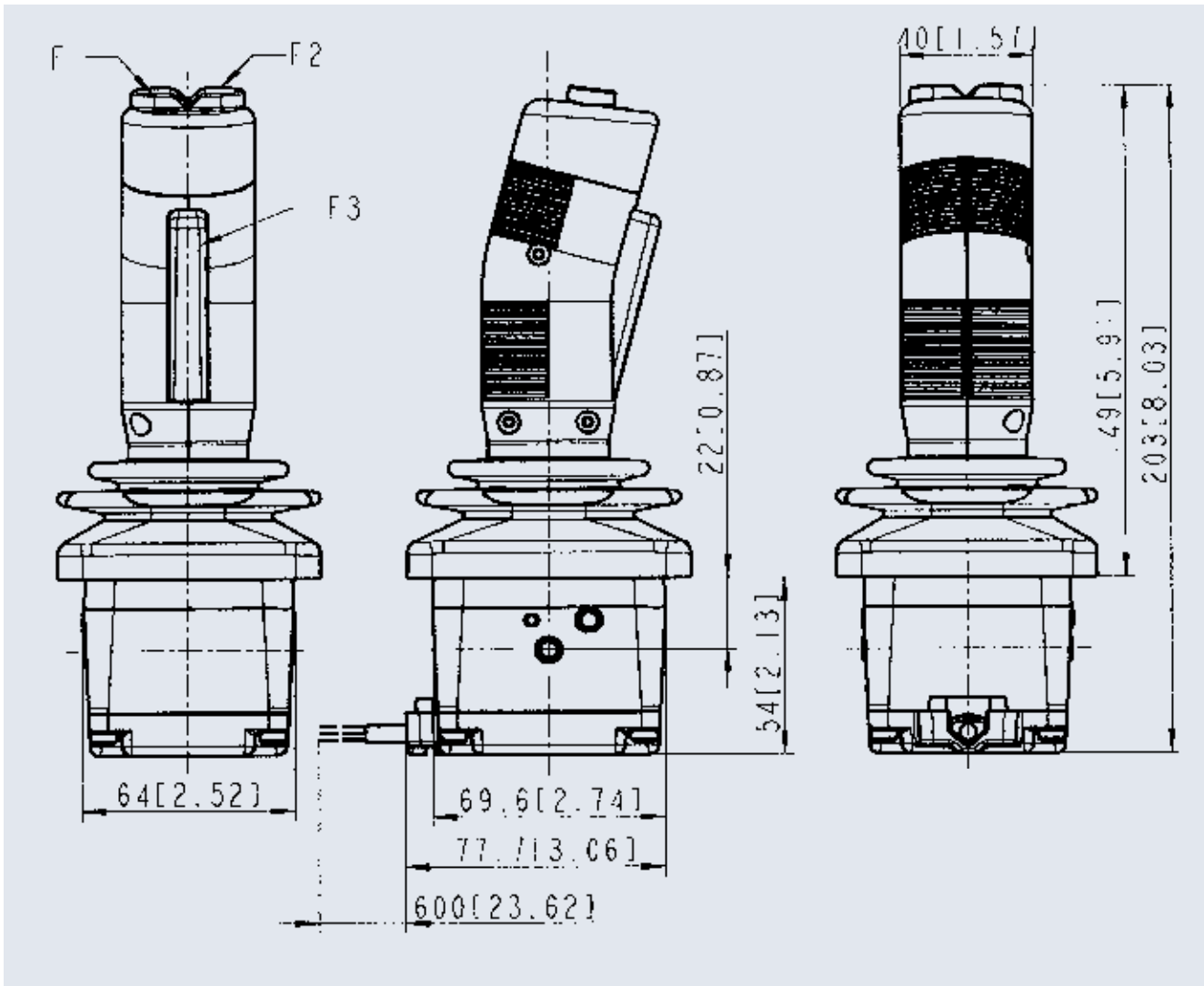
# AJ3 Joystick – Ball Grip



Color	Signal	V01	V04	V08
WH	V supply	8...30V dc	12.5V...30V dc	8...30V dc
BN	GND			
GN	Output center position	0V/V supply	0V/V supply	0V/V supply
YE	Output X-Axis	0V...V supply-2.5 dc*	3V...9V dc	0.5V...4.5V dc
GY	Output Y-Asix	0V...V supply-2.5 dc*	3V...9V dc	0.5V...4.5V dc
Part	AJ3SX12Y12	V01 C2 BALL	V04 C2 BALL	V08 C2 BALL

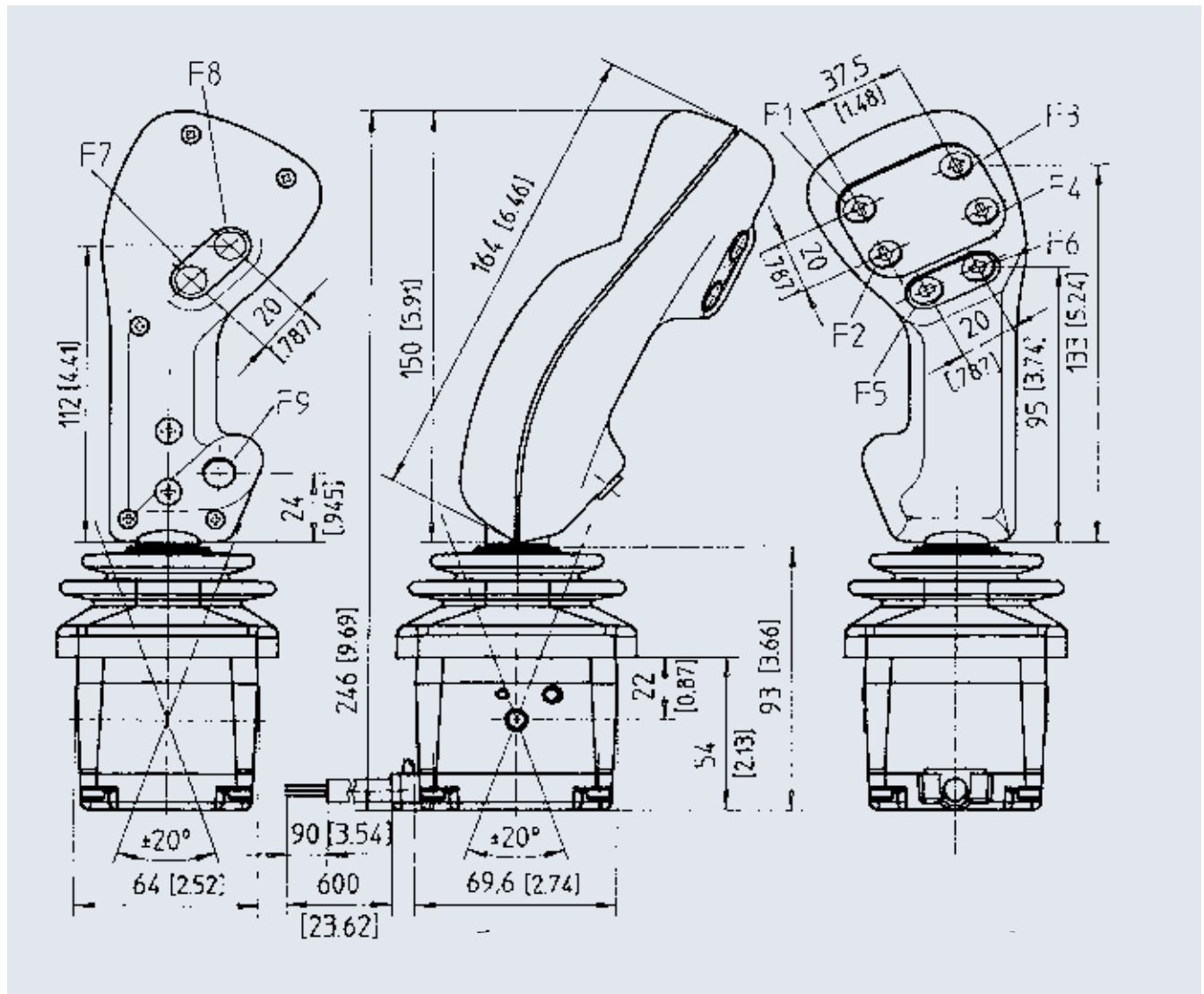
\*output will vary with supply voltage

# AJ3 Joystick – MFGS233 Grip



\*output will vary with supply voltage

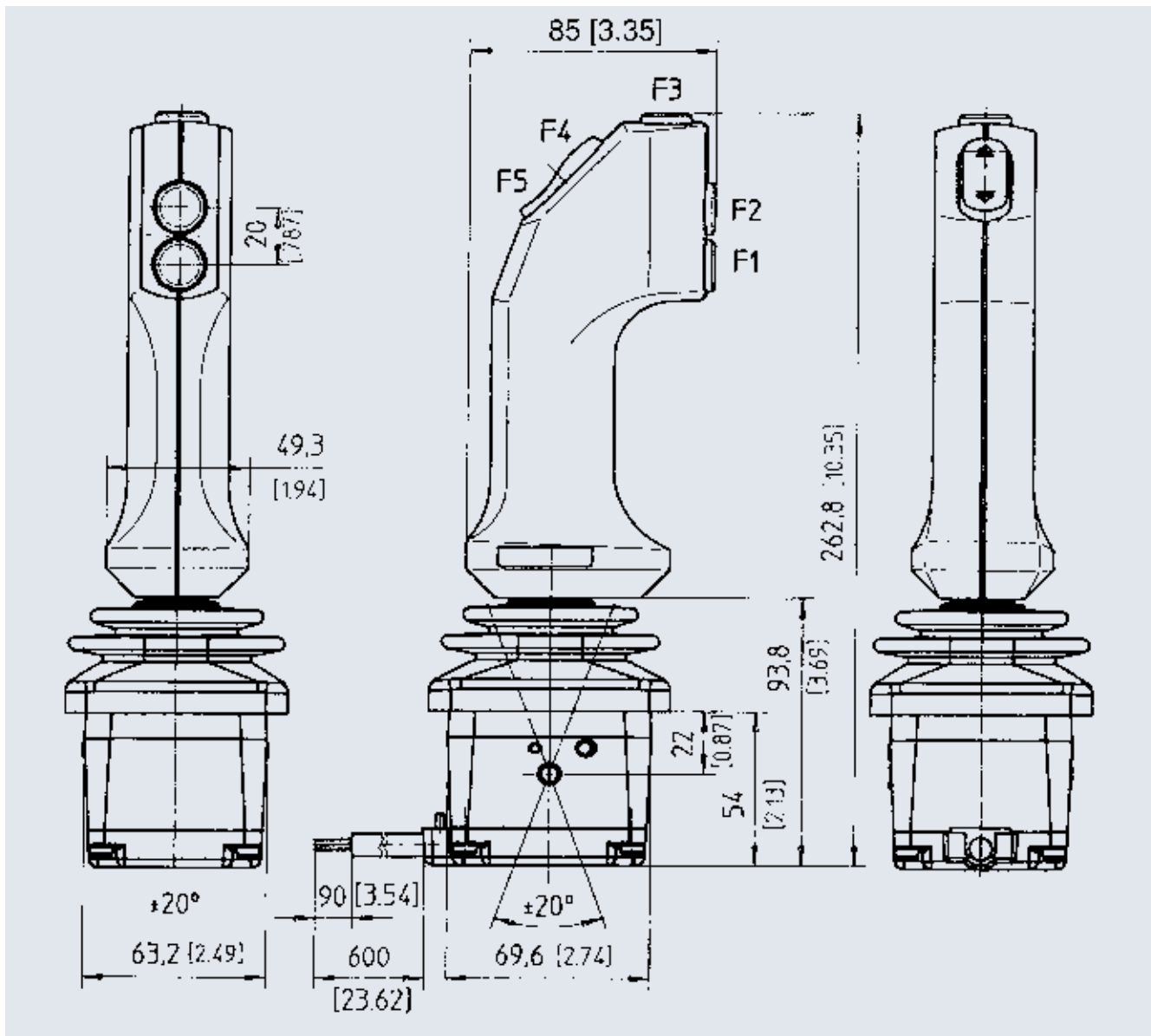
# AJ3 Joystick – MFGKHD9 Grip



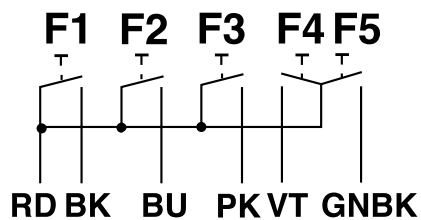
Wiring Information				
<p style="text-align: center;"> <b>F1 F2    F3 F4    F5 F6    F7 F8    F9</b>  </p>				
Color	Signal	V01	V04	V08
WH	V supply	8...30V dc	12.5V...30V dc	8...30V dc
BN	GND			
GN	Output center position	0V/V supply	0V/V supply	0V/V supply
YE	Output X-Axis	0V...V supply-2.5 dc*	3V...9V dc	0.5V...4.5V dc
GY	Output Y-Asix	0V...V supply-2.5 dc*	3V...9V dc	0.5V...4.5V dc
Part	AJ3SX12Y12	V01 C2 KHD9	V01 C2 KHD9	V08 C2 KHD9

\*output will vary with supply voltage

# AJ3 Joystick – MFGS1F5 Grip



## Wiring Information

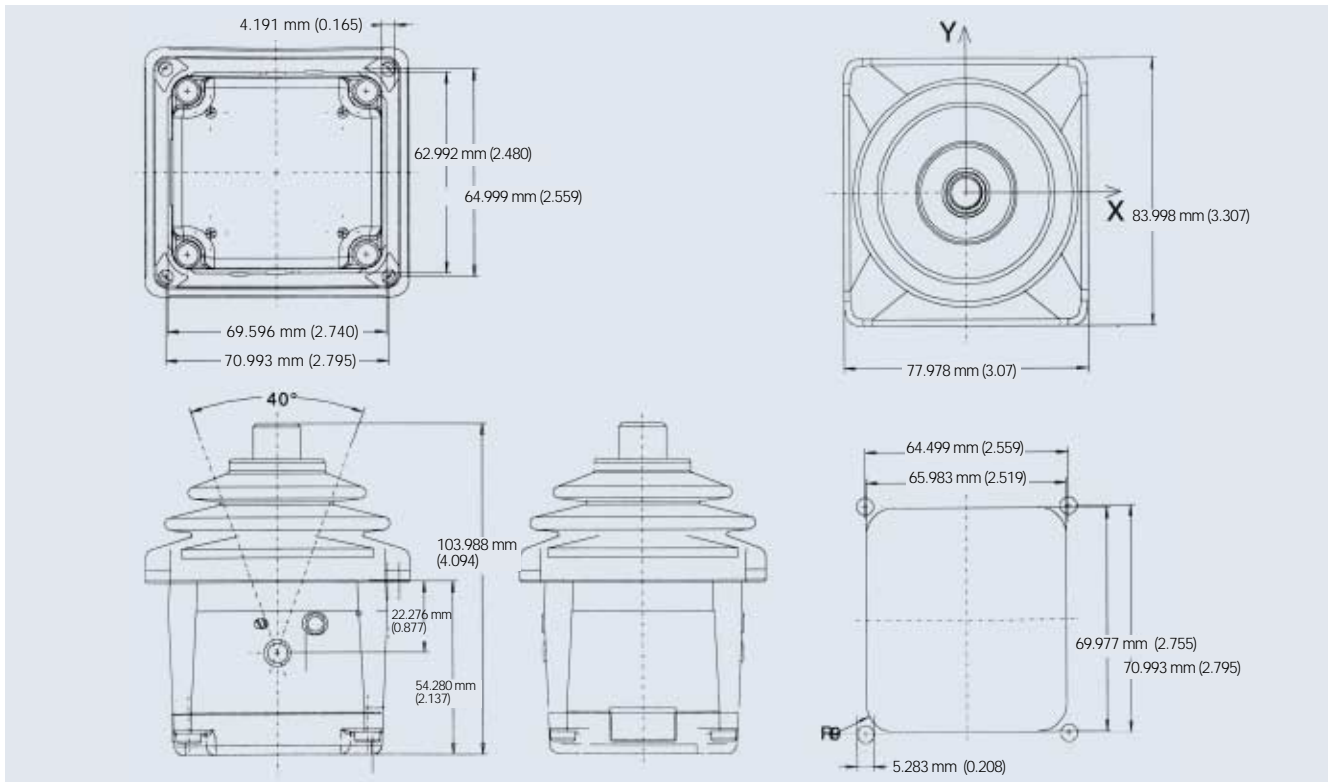


Color	Signal	V01	V04	V08
WH	V supply	8...30V dc	12.5V...30V dc	8...30V dc
BN	GND			
GN	Output center position	0V/V supply	0V/V supply	0V/V supply
YE	Output X-Axis	0V...V supply-2.5 dc*	3V...9V dc	0.5V...4.5V dc
GY	Output Y-Axis	0V...V supply-2.5 dc*	3V...9V dc	0.5V...4.5V dc
Part	AJ3SX12Y12	V01 C2 S1J5	V01 C2 S1J5	V08 C2 S1J5

\*output will vary with supply voltage

# AJ3 Joystick Base Unit

## Dimensional Drawings



Ordering code		1	2	3	4	5	6	7	8	9
Example		AJ3	S	X8	Y8	NA	O31	CA1	C2	KHD9
1	Type	AJ3								
2	Gate	O = Round S = Square C = Cross X = X-axis single Y = Y axis single								
3	X-Axis Operation Force	X4 = 4 N X8 = 8 N X12 = 12 N X16 = 16 N								
4	Y-Axis Operation Force	Y4 = 4 N Y8 = 8N Y12 = 12 N Y16 = 16 N								
5	Friction Hold	Currently not available NA = None								
6	Over Travel (float)	N = None O30 = +12 N all directions O31 = +12 N forward O32 = +12 N right O35 = 12 N forward + rt.								
7	Output Signals	VO1 = 0 - Ubat - 2.5V VO2 = 0 - 5V VO3 = 0 - 10V VO4 = 3 - 9V VO8 = 0.5 - 4.5V CO1 = Current 4 - 20 mA PW1 = PWM 122 Hz CA1 = CA N 2.0A CA2 = CA N 2.0B								
8	Output Center Position	C2 = voltage (default)								
9	Grip	0 = No Grip Attached S1J5 = MFG S1J5 KHD9 = MFG KHD9 S2J3 = MFG S2J3 Ball								