JR3, Inc. 22 Harter Ave, Woodland, CA 95776 (530) 661-3677

45E15A

SENSOR OVERVIEW

The 45E15 is a member of the ***JR3*** family of six axis force and torque transducers with internal electronics. It is 4.5 inches in diameter and 1.5 inches thick. The ISO 63mm variant uses the mechanical interface specified by the International Standard ISO 9409-1 -A 63, other variants match specific industrial robots.

The 45E15 has amplifier, signal conditioning and A/D or analog output buffer electronics integrated into the sensor body. Versions with digital or analog output are available. The analog version includes output buffer amplifiers and provides high level analog output of +5V to –5V or +10V to –10V. The digital version includes a 16 bit analog to digital converter, an EEPROM containing calibration data and RS-485 serial drivers. It outputs a 2 megabit per second serial data stream which contains complete 6 axis data at 8 kHz and can be read by any of ***JR3***'s serial receivers. The 16 bit A/D converter and multiple full Wheatstone bridge strain gage configuration provides outstanding resolution.

The 45E15 is machined from a solid billet of aluminum. The resulting monolithic structure produces a transducer with unsurpassed hysteresis and precision properties. The 45E15 uses metal foil strain gages bonded to strain rings as the sensing element. This produces linearity, and thermal performance superior to other strain sensing technologies and geometries. The mechanical structure of the 45E15 also produces a transducer with exceptional stiffness.

As can be seen on the interface drawing, the 45E15 has captive bolts which allow direct connection to the user's tool flange. The top of the transducer contains a copy of the tool flange. This feature eliminates the need for adapter plates, which saves weight and lowers the installed height.

The 45E15 can interface with analog data acquisition systems or a variety of ***JR3*** receiver electronics.

JR3 Model NO. 45E15A-I63

Capacities, Resolutions, Stiffnesses and Permissible Single Axis Overloads:

100 lb Model:

Fx,Fy	Fz		Mx,My	Mz	
100	200	lbs	450	450	in-lbs
400	800	N	50	50	N-m
0.05	0.09	lbs	0.06	0.06	in-lbs
108	1170	klbs/in	2050	645	kin-lbs/rad
550	2200	lbs	2050	1750	in-lbs

250 lb Model:

Fx,Fy	Fz		Mx,My	Mz	
250	500	lbs	1125	1125	in-lbs
1000	2000	N	125	125	N-m
0.03	0.06	lbs	0.14	0.14	in-lbs
365	2830	klbs/in	4800	1500	kin-lbs/rad
1580	4800	lbs	4400	3750	in-lbs

25 lb, 50 lb and 150 lb versions are also available.

Weight:

2 lb (0.9 kg)

Available interfaces (bolt patterns) for 45E15:

ISO 63 mm, U760

JR3**, Inc. has been designing and manufacturing six axis loadcells since 1983. We have manufactured six axis loadcells ranging in diameter from 2 to 13 inches, and with load capacities from 2 to 25,000 lbs and 0.25 to 22,000 ft-lbs. Please feel free to call our applications engineers to discuss your particular needs.**