

## 20E12A-I25 100N5 sensor for use with external electronics

The 20E12A-I25 sensor has no electronic components within the sensor body. As a result it can withstand environmental conditions, such as high temperatures or radiation beyond those possible for sensors with internal electronic components.

The sensor is unusually stiff relative to the load rating; this enables improved accuracy of position over changing loads. The sensor can safely withstand 125% of the rated load applied to all axes simultaneously. If a single axis is loaded, with no loads applied to other axes the safe load of the loaded axis is much greater.

The external electronic system can be set to electrical full scales as low as 20% of the standard load rating providing substantially improved resolution.

The load ratings, maximum safe single axis loads and stiffness are specified in the chart below.

Axis	Load Rating	Maximum Safe Load	Stiffness
Fx	100 N	890 N	30.3e3 lb./in.
Fy	100 N	890 N	30.3e3 lb./in.
Fz	200 N	3100 N	302e3 lb./in.
Mx	5 Nm	29 Nm	82.8e3 in-lb./rad
My	5 Nm	29 Nm	82.8e3 in-lb./rad
Mz	5 Nm	22 Nm	21.7e3 in-lb./rad

When used with a JR3 electronic system with digital output resolution is approximately 1 part in 8000 of the electrical full scale.

Resolution with a JR3 analog output electronic system is 1 part in 16,000 of the electrical full scale or better. Useable resolution may be limited by the A/D system used to digitize the data.

Refer to JR3 drawing No. 4844 for the mechanical details of the sensor.

The JR3 external electronic system can be ordered with the electrical full scales set as low as 20% of the mechanical full scale. Any or all axes can be specified at any value between the sensor load rating and 20% of the sensor load rating. There will be a slight increase in noise and thermal variation when set at the minimum full scale but normally this does not cause difficulty.

Two different sets of full scales, selected by moving jumpers in the electronic system can be specified. This allows the same sensor and electronic system to be used for tasks requiring substantially different full scales.

Axis	20E12A 40N2.25 Load Rating	Minimum Full Scale
Fx	100 N	20 N
Fy	100 N	20 N
Fz	200 N	40 N
Mx	5 Nm	1 Nm
My	5 Nm	1 Nm
Mz	5 Nm	1 Nm *

\* Under some conditions Mz may be specified with a full scale below 1 Nm. Contact JR3 for additional information.