



OPERATING PRINCIPLE:
Carlson Instruments are elastic wire strain meters containing two coils of highly elastic steel wire, one of which increases in length and electrical resistance when a strain occurs, while the other decreases. The ratio of the two resistances is independent of temperature (except for thermal expansion) and therefore the change in resistance ratio is a measure of strain. The total resistance is independent of strain since one coil increases the same amount as the other decreases due to a change in length of the meter. Therefore, the total resistance is a measure of temperature.

	PRODUCT CATEGORY:
	CARLSON INSTRUMENTS

Carlson Joint and Foundation Meters

Carlson Joint Meters and Foundation Meters are similar to strain meters except with greater range. This is accomplished by having a coil spring in series with each of two loops of elastic wire. The foundation meter is the same as the joint meter except that it has its range mainly in contraction. The joint meter is used mainly to measure the opening to joints and therefore it has most of its range in expansion. Range is allowed by spring loading the elastic wire. Both measure temperature as well as expansion or contraction in the same way that strain meters do.

The dimensions of the joint and foundation meters are roughly similar to those of the strain meter. A bellows near the center of the length permits movement to be transmitted to the interior elastic wires. The bellows has a bursting pressure of 400 psi (2.7 MPa), but should normally not be exposed to more than 100 psi (690 kPa) hydraulic pressure. Padded heat shrink tubing is placed over the bellows to prevent bonding or jamming by concrete or mud.

The installation of joint meters is facilitated by embedding a steel socket on one side of the joint, and not inserting the joint meter until just before placing the concrete on the second side. However, there are many applications of the joint meters, so they can be ordered with or without sockets.

SPECIFICATIONS

DESCRIPTION	JOINT METERS		
	J0.1	J0.25	J0.5
Range Contraction	0.51 mm (0.02 in.)	0.25mm (0.01 in.)	0.25 mm (0.01 in.)
Range Expansion	2.0 mm (0.08 in.)	6.1 mm (.24 in.)	10.2 mm (0.4 in.)
Resolution	0.005 mm. (0.002 in.)	.013 mm (.0005 in.)	0.025 mm (0.001 in.)
Resolution Temperature	0.1°F (0.05°C)	0.1°F (0.05°C)	0.1°F (0.05°C)
DESCRIPTION	FOUNDATION METERS		
	F0.1	F0.25	F0.5
Range Contraction	2.0 mm (0.08 in.)	6.1 mm (0.24 in.)	10.2 mm (0.4 in.)
Range Expansion	0.51 mm (0.2 in.)	0.25 mm (0.01 in.)	2.5 mm (0.1 in.)
Resolution	0.005 mm (0.0002 in.)	0.013 mm (0.0005 in.)	0.025 mm (0.001 in.)
Resolution Temperature	0.1°F (0.05°C)	0.1°F (0.05°C)	0.1°F (0.05°C)

ORDERING INFO

ITEM	JOINT METERS		
	J0.1	J0.25	J0.5
Part Number	CA270A010	CA270A025	CA270A050
ITEM	FOUNDATION METERS		
	F0.1	F0.25	F0.5
Part Number	CA320A010	CA320A025	CA320A050