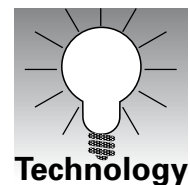


Our unique, patented STRAIN-MATE™ Technology



With our innovative, proven STRAIN-MATE™ technology, measuring elements sensitive to strain are pressed so forcibly onto the measured surface with damping and insulating elements that any expansion of the surface under frictional contact is transmitted to the measuring elements. As a result, STRAIN-MATE™ sensors invariably function in the force shunt circuit, so they cannot be overloaded. The patented STRAIN-MATE™ technology offers the user a number of advantages over bonded S/Gs.

- Considerable time saving in installation
- Mechanical protection against damage for the measuring point
- The user needs no special knowledge for the installation
- The sensors can be replaced at any time without recalibration
- Exceptionally high application reliability

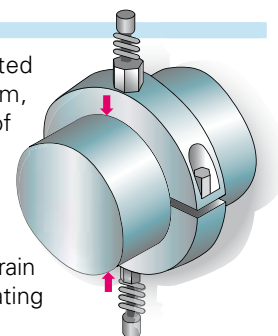
Use of Strain Probes



The measuring probes incorporated in the STRAIN-MATE™ system permit the measurement of degrees of strain in deeply drilled-holes in tie bars and shafts. Examples of typical applications are cyclical locking pressure measurements in injection molding and diecasting machines, presses and stamping machines.

Use of Strain Rings

Strain rings, likewise incorporated in the STRAIN-MATE™ system, measure the surface expansion of tie bars and shafts. Examples of typical applications are clamping force measurements in injection molding and diecasting machines, presses and stamping machines. Strain rings are also often used for calibrating these types of machine.



STRAIN-MATE™ technology brings exceptional time savings

Criterion	Requirements for bonded S/G	Requirements for press-fitted S/G
Surface cleaning	10 to 30 min (chemically clean)	0 min (not needed)
Surface grinding	5 to 10 min (grain 400, concentric)	0 min (not needed)
Preparation and application	15 to 30 min	2 to 5 min
Equipment and tools	Soldering iron, tweezers, scissors, ohmmeter, paintbrush, scalpel	Torque wrench (3 Nm)
Materials (one-way and disposable materials)	Adhesive tape, masking tape, teflon tape, low-temperature solder, solvents (!) for surface cleaning, silicon paste	None
Mechanical protection and wiring	With pastes and foils, time: 10 to 25 min	Integrated into mechanical component, time: 0 min
Amplifier calibration (adjustment)	Required after each bonding	Standard sensitivity of S/G ($k = 2.00$)
Standard of (several day's course)	Special training required knowledge needed	No special user's knowledge
Exchangeability of sensors	Not possible	At any time, without recalibration
Procedure following application error	All work and materials lost	Simply reinstall sensor
Application reliability	Depending on conditions and care, up to 100%	Always 100%, incl. mechanical protection
Environmental aspects	Many disposable materials, solvents, S/G can only be used once for voltage analyses	No disposal materials, multiple press fitting of S/G possible (up to 200 times)