Strain Sensors DA40 and DA54

Measurement range: ±0.1 µm/m to ±1000 µm/m

	DA40	DA54-PUR	DA54-M12
Illustration			
Dimensions	40mm x 26mm x 10mm	54mm x 30mm x 20mm	54mm x 30mm x 20mm
Cable	5m 4x0.14, Ø3mm	5m 2x2x0.25, Ø6mm	built-in jack M12 type 763 spring contact

Accessories	Illustration
Adhesive EPY 150 (included in delivery)	
Adhesive M-Bond 30 (optional)	
Filling gun (optional)	

Description

The areas of application for the strain sensors DA40 and DA54 are the high-resolution acquisition of forces and deformations on massive components e.g. of presses, lifting tools, tanks, steel supports, bridges as well as on connecting rods or pedestals of production machines.
The retrospective installability make these strain sensors into universal, retro-fittable sensors for monitoring force and load. These strain sensors are durable and resistant to oil and moisture.

The most favorable installation position is lateral to the direction of loading. The forces are then transmitted through the housing. Up to an strain of 1000µm/m, however, assembly longitudinal to the direction of the stress is possible without any limitation in the accuracy.

The strain sensors DA40, DA54 and DadX are excellently suited for static and dynamic measurements.

The strain sensors DA40 and DA54 only differ from each other in their dimensions and the fasteners (M4 or M6).

The strain sensors DadX consist of two half-shells, which are mounted on pillars. They are available for diameters from 50mm to 250mm.

The sensor DA54 is also available without a sink for mounting with concealed studs.

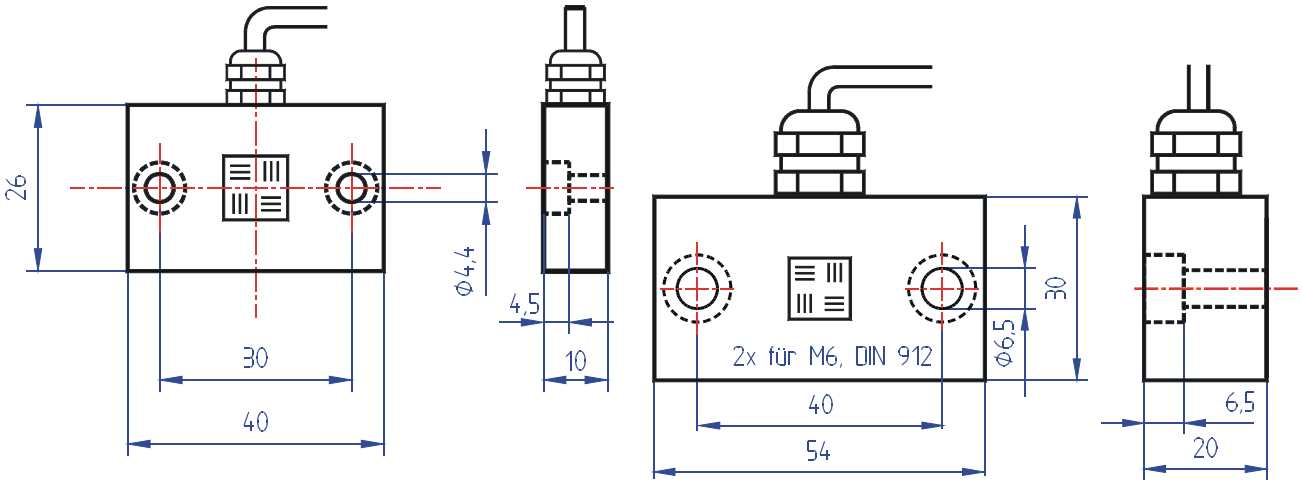
The same performance features are achieved with these strain sensors in their robust and installation-friendly aluminum housing as with the direct application of strain gages . This includes a high resolution, very low drift symptoms and the possibilities for both static and dynamic measurement.
The strain sensor contains a completely wired strain gage, which, when the strain sensor is being screwed on, is pressed on the component to be glued by a specially shaped pressing mechanism. The housing serves as a mounting frame for the strain gage application.

The surface of the component must be ground and cleaned before screwing on the strain sensor in the area of the strain gage. The strain gage is permanently protected against moisture by means of a special, oil-resistant seal.
The null balancing of the strain gage is carried out after the installation of the strain sensor by the strain gage measuring amplifier GSV-2. strains from 0.1µm/m onwards can be displayed. This corresponds to a mechanical stress of about 0.02N/mm^2 on a component surface of steel. With the combination of strain sensor and measuring amplifier GSV-2, switching thresholds from about 1µm/m (corresponding to 0.2N/mm^2) onwards can be monitored, if a null balancing is carried out periodically.
For applications in weighing technology, an strain range of at least 30µm/m (6 N/mm^2) is recommended, in order to achieve as low a drift as possible.

Dimensions

DA40

DA54



positive strain: <-->

Technical Data

Strain senor	tension / compression	
Length × width × height	40 × 26 × 10 or 54 x 30 x 10	mm × mm × mm
Fastening of strain gage	adhesive sealing	
Fastening of housing	2 × for M4 or M6 DIN 912	
Material of housing	aluminum	
Measurement range (ε_N)	±0,1 ... ±1000	µm/m
Input resistance	350 ±0,7	Ohm
Output resistance	350 ±0,7	Ohm
Insulation resistance	> 5 · 10^9	Ohm
Supply voltage	2.5…10	V
Connection, 4-conductor	5	m

Pin configuration

		DA40	DA54	
+U_S	positive bridge supply	red	brown	
-U_S	negative bridge supply	black	white	shield: transparent
+U_D	positiver bridge output	green	green	
-U_D	negative bridge output	white	yellow	

Optional: flange jack (spring contact)	**pin number**	**ME cabel**	**ME cabel**	**763**	**designation**
 (top view)	1	brown (+pink)	red	brown	+ supply (+U_S)
	2	white (+gray)	black	white	- supply (-U_S)
	3	green	green	blue	+ signal (+U_d)
	4	yellow	white	black	- signal (-U_d)