

Analysis wrench

Type 5413-1500/...

Handheld torque/angle of rotation wrench

The Analysis wrenches operate according to the strain gauge principle and supply a passive analog output signal in mV/V.

- Measuring range of 3 N·m to 1,000 N·m
- AUTOCODE identification
- Connection socket in handle
- Residual torque function with measuring and evaluation unit INSPECTpro (carry-on-tightening)
- Standardized holders for plug-in tools



Description

The Analysis wrenches consist of a handle with an integrated connection socket to connect the wrench with a sensor cable to a measuring and evaluation unit, a control unit with LED status display, a steel pipe with an integrated bending rod with strain gauges for torque measurement, and a gyroscope for referenceless angle of rotation measurement, as well as a tool holder for the plug-in tool.

The LED status display of the Analysis wrench provides feedback about the operating status and when the target value is obtained (when used on the measuring and evaluation unit INSPECTpro).

The integrated AUTOCODE system enables the sensor to be automatically detected and calibrated when it is connected to appropriately equipped measuring systems.

The Analysis wrenches are delivered with a quality certificate. Upon request, the Analysis wrenches are calibrated with traceability in our DAkkS-accredited calibration lab.

Application

The main applications are torque / angle of rotation measurements, as well as the special functions associated with the measuring and evaluation unit INSPECTpro.

Application areas for the Analysis wrenches:

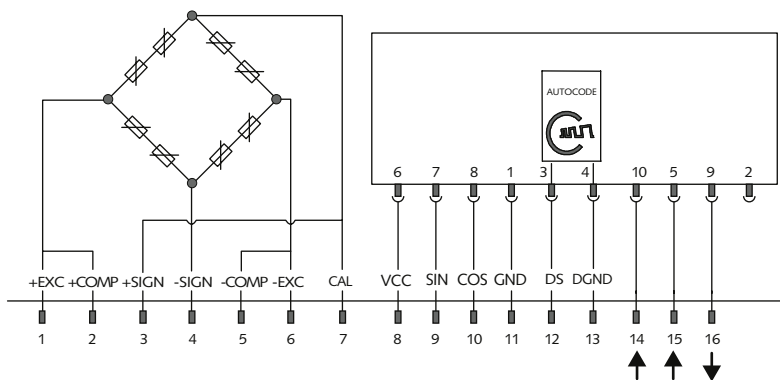
- Function as torque / angle of rotation sensor:
The Analysis wrench measures the torque (as a passive strain gauge sensor) and the angle of rotation.
- Carry-on-tightening functions according to VDI/VDE 2645 Part 3: Together with the "Carry-on-tightening" software module activated in the measuring and evaluation unit INSPECTpro, corresponding carry-on-tightening functions are available (residual torque).
- Fastening point-related tests with CEUS and the measuring and evaluation unit INSPECTpro:
In conjunction with the CEUS software, fastening point-related tests can be used as peak value measurements and the corresponding carry-on-tightening functions.

Technical data

Basic mechanical / electrical data for the Analysis wrenches

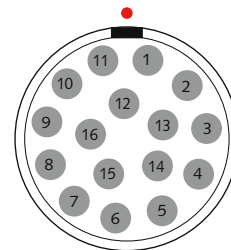
Maximum service torque	1.2 x nominal torque (20% overload)
Maximum permitted torque	1.5 x nominal torque (50% overload)
Angular division	10 pulses/°
Bridge resistance	350 Ω
Calibration resistance	40 kΩ (+/- 0.1%)
Nominal characteristic value	2 mV/V
Nominal supply voltage	5 V
Supply voltage operating range	2.5 ... 10 V
Operating temp. range (Nominal temp. range)	10 ... 40°C
Service temp. range	0 ... 50°C
Storage temp. range	-20 ... 70°C
Relative humidity	max. 70%, non-bedewing / non-condensing
Housing material	Steel/plastic
Level of protection	IP 40
Electrical connection	
Connection socket	ODU: Type G52 B0C-P16PFG9

Torque measuring bridge and angle of rotation signal conditioning of the Analysis wrenches

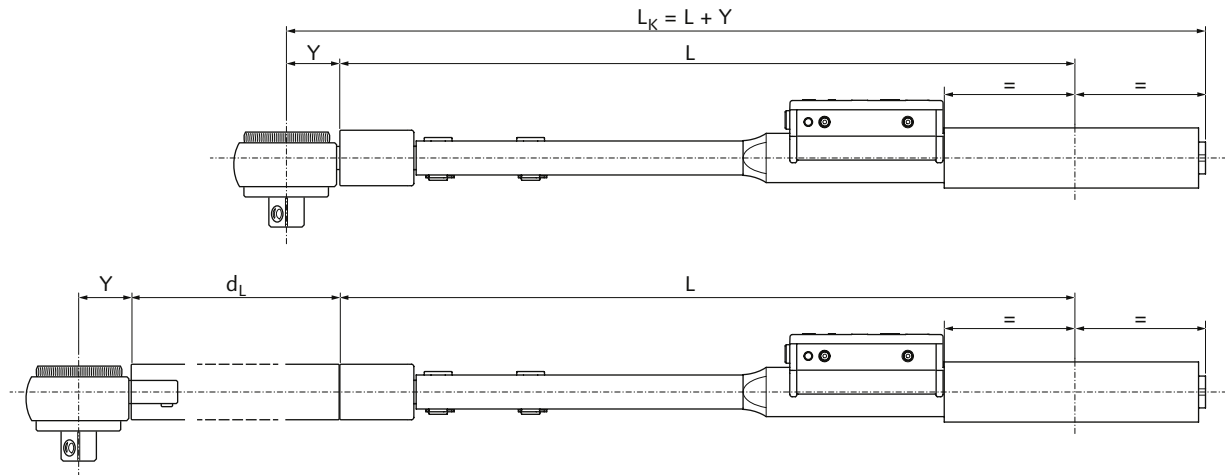


Key:
 14 Target value obtained
 15 Measurement in progress
 16 Gyroscope malfunction

ODU connection socket assignment



Technical data and dimensions



- L Load application length
 Y Calibration dimension (plug-in tool length)
 L_K Calibration length
 d_L Extension through adaptor (customer-side application)
 $Y + d_L$ Application gauge

For the extension through adaptors on the customer side, the application gauge and the corrected value must be determined.

Type 5413-1500/..	.../15	.../50	.../200	.../400	.../600	.../1,000
Nominal value	15 N·m	50 N·m	200 N·m	400 N·m	600 N·m	1,000 N·m
Achievable meas. uncertainty acc. to DIN EN ISO 6789-2 (Torque)	≤2%		≤1%			
Display deviation (Angle of rotation)	≤1° per revolution					
Connection plug-in tool	9x12 mm	9x12 mm	14x18 mm	14x18 mm	Ø 22 mm	22x28 mm
Calibration dimension (Y)	17.5 mm	17.5 mm	25.0 mm	33.0 mm	56.0 mm	55.0 mm
Load application length (L)	228.0 mm	228.0 mm	386.0 mm	529.0 mm	845.0 mm	1,400.0 mm
Weight	0.46 kg	0.48 kg	0.66 kg	2.02 kg	2.72 kg	9.84 kg

Optional accessories

	Type
Plug-in tool, 1/4", 9 x 12 mm	18033140
Plug-in tool, 3/8", 9 x 12 mm	18033142
Plug-in tool, 1/2", 14 x 18 mm	18033144
Plug-in tool, 3/4", 14 x 18 mm	18033146
Plug-in tool, 3/4", round 22 mm	18033148
Plug-in tool, 3/4", 22 x 28 mm	18036438
Sensor cable, 2 m	18033153
Sensor cable, 5 m	18033154