

ControlMonitor CoMo Torque

Evaluation Instrument for Torque Sensors

Type 4700B...

The evaluation instrument CoMo Torque Type 4700B... is ideal for industrial use and for research and development applications. Torque sensors with strain gage technology and standardised voltage output or frequency output can be connected directly.

- Display with indication of exact measured data for torque, speed, angle of rotation, force and mechanical power
- 4x20 character display
- Multiple menu language operation
- High measuring accuracy <0,05 %
- High scan rate 10 kHz
- Low-pass filter (filter off, 0,1 Hz ... 1 kHz)
- Memory with up to 5 000 measured values, each channel
- Min/max capture and limit value monitoring
- Can be remoted via USB or RS-232C
- Scaled analog outputs

Description

The simple parameterisation allows it to be used in production when evaluating torque/revolution measurements or torque/angle of rotation measurements. The intuitive menu of the Type 4700B... allows it to be quickly adapted to new measurements and inspection tasks. Settings can be made easily for all functions, such as taring, saving peak values, average determination, setting limits, measurement duration, pre- and post triggers, calibration, scope of display, units, and the interface. Up to 20 parameter records can be stored internally in the non-volatile flashmemory.

The desktop unit can be operated with a supply voltage of 100 ... 240 VAC. All connections are plug-in.



Application

The industrial usages are numerous and various:

- Determination of the performance of powered equipment using torque input and revolution
- Design of transfer components or systems by determining the efficiency factor (for example, for clutches, brakes, gear boxes, motors and turbines)
- Process control when screwing or verifying the inflexion point for torque wrenches
- Function control during assembly, if the torque is evaluated in dependence of the angle of rotation; for example, when checking seat adjustments and hinges. The result of the evaluation is shown on the digital display as an OK or NOK signal

Regarding the precision of measurements, logging of extreme values and the measured data storage, the Type 4700B... is also suitable for use in research and development.

4700B_000-944e-01_12

Technical Data

General

Measuring rate	kHz	≤10
Limit frequency	kHz	≤1
Accuracy	% f.s.	<±0,05
Min./max. peak detection	ms	1
Reaction on threshold exceeding	ms	1
Operating temperature range (rated temperature range)	°C	10 ... 60
Service temperature range	°C	-10 ... 60
Storage temperature range	°C	-25 ... 80
Measured value storage		ring buffer for up to 5 000 measured values
Input power	VAC Hz	100 ... 240 50 ... 60
Housing material		Aluminum
Dimensions		
width	mm	260
height	HE	2
Weight	kg	≈2

Display

4x20 character-LC display	max. 7-digit per value
Keyboard	membrane keypad 7 keys
Menu language	German/English/French/Italian/ Spanish


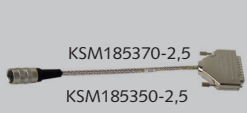
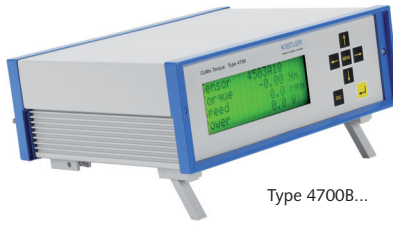


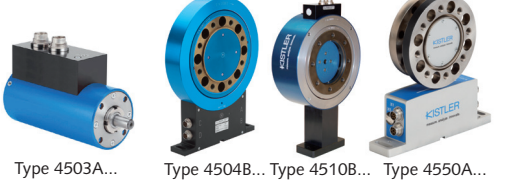
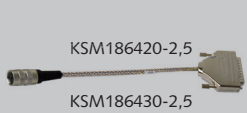
Sensor Inputs

Torque and force transducer strain gage full bridge 4-/6-conductor techniques	mV/V	0,5 ... 3,5
Supply	V	5 (50 mA)
Torque transducer	VDC	±5
	VDC	±10
Frequency	kHz	≤300
Supply	V	24 (700 mA)
Speed input		kHz
TTL ≤300		
Angle of rotation input	kHz	TTL ≤300

Control Signals, Analog Output, Interface

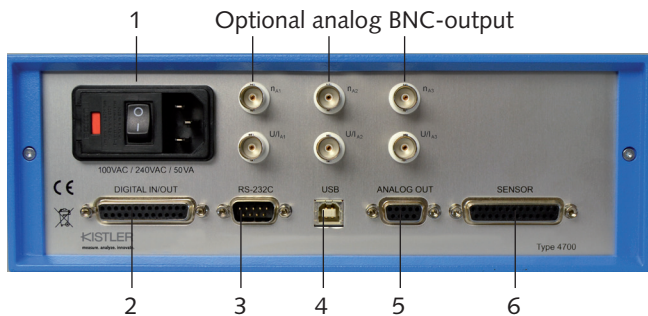
8 digital logic I/O signal each		
output signal		open collector
input signal		TTL or 24 VDC
Analog output 1:		
torque/load	VDC	±10
with update rate	kHz	10
Analog output 2:		
torque/speed/angle	VDC	±10
with update rate	Hz	1
Analog output 3:		
mechanical rating	VDC	±10
with update rate	kHz	1
Interface		USB 2.0 RS-232C
Communication port	kbps	≈115

Typical Application

Measuring	Connecting	Analyzing
<p>Torque Sensor</p>  <p>Type 4501A...</p>	 <p>KSM185370-2,5 KSM185350-2,5</p>	<p>ControlMonitor CoMo Torque Evaluation Instrument for Torque Sensors</p>  <p>Type 4700B...</p>
<p>Torque Sensor</p>  <p>Type 4502A... Type 4520A...</p>	 <p>KSM185380-2,5</p>	
<p>Torque Sensor Torque Measuring Flange</p>  <p>Type 4503A... Type 4504B... Type 4510B... Type 4550A... Type 4541A...</p>	 <p>KSM186420-2,5 KSM186430-2,5</p>	

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Pin Assignment and Connection Diagram



- 1 Power input with voltage selector
100 ... 240 V/50 VA, 400 mA MT
- 2 Digital input/output lines
- 3 RS-232C
- 4 USB connector
- 5 Analog output signals
- 6 Sensor connector

Included Accessories

- Power connector EU
- 9 pin null modem cable
- USB cable
- CD with software SensorTool
Type 4706A

Type/Art. No.

KSM006309
KSM009720
KSM030552

Optional Accessories

- Power connector US, Japan
- Power connector UK
- Type 4700B... – analog output
connection cable, 5 m
- Connection cable analog, 2,5 m, 12 pin
for Type 4700B... to Type 4503A...,
4504B... and 4510B... KSM186420-2,5
- Connection cable frequency, 2,5 m,
12 pin for Type 4700B... to Type 4503A...,
4504B... and 4510B... KSM186430-2,5
- Connection cable analog, 2,5 m, 12 pin
for Type 4700B... to Type 4502A...,
4520A... KSM185380-2,5
- Connection cable analog, 2,5 m, 6 pin
for Type 4700B... to Type 4501A... Q/R
(respectively force) KSM185350-2,5
- Connection cable strain gage with
angle, 2,5 m, 12 pin
for Type 4700B... to Type 4501A... QA KSM185370-2,5

See data sheet 000-615 for other cables.

Typical Application

- Measurement of Torque, Speed and Mechanical Power
Electric motors, gear-boxes, fans, combustion engines, com-
pressors, easy movement at lubrication pumps and cooler
pumps, crankshaft drives and camshafts.
- Test of Friction Clutches for Pneumatic and Electronic Screw-
drivers
- Viscosity Measurements
- Measurement of Forces
Verification of mating and press-fit force. Test of contactors
and push buttons.

Ordering Key

Operating voltage		Type 4700B
100 ... 240 VAC/50 VA	P0	<input type="checkbox"/>
Analog BNC-output		<input type="checkbox"/>
Without	00	↑
For voltage	UA	
For current	IA	
For voltage a. speed/rotation angle	UN	

Order Example:

Type 4700BP0UN

ControlMonitoring CoMo Torque, evaluation instrument for
torque sensors **Type 4700B**, **P0**: 100 ... 240 VAC/50 VA, analog
BNC-output **UN**: for voltage and speed/rotation angle