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ControlMonitor CoMo View®

Type 5863A2...

Web Server for Production Monitoring

The new CoMo View Type 5863A2... with integrated 5,7" touch screen color display (320x240 pixels) meets all requirements for in-process quality monitoring. This latest member of the CoMo family has the customary evaluation functions. This means that almost all manufacturing processes can be reliably monitored and documented.

Ethernet allows standardized communication at all levels throughout the company network. This opens up the possibility of setting up and displaying data on PCs or web terminals at any location on a local area network (LAN). The CoMo View or CoMo Net with web server functionality is then directly linked to the world of TCP/IP. This allows the use of familiar browser functions to control or view many functions and a great deal of information from anywhere in the world, naturally with appropriate safeguards and access authorizations. This use of the existing network structure simplifies centralized storage of quality data in larger, complex production facilities and offers cost advantages. Remote maintenance and diagnostics allow quick, expert and cost-effective on-site assistance in the event of a problem.

- 5,7" STN touch screen color display for process visualization.
- Flexible monitoring of joining, press-fit and testing processes.
- Intuitive operation, multilingual
- y-channel for connecting piezoelectric and strain gage sensors as well as sensors with voltage output
- x-channel for connecting a displacement sensor (potentiometric, incremental, absolute) or a sensor with voltage output
- Measuring mode y(x) and y(t)
- Measurement and monitoring of, for example:
  - F(t) Force against time
  - F(s) Force against displacement
  - M(t) Torque against time
  - M(φ) Torque against rotation angle
  - s(t) Displacement against time
- Process monitoring in all 4 quadrants
- 12 different evaluation functions can be freely combined for monitoring threading, curve trace, trend, hysteresis, block force and limit position.
- Real-time thresholds for overload protection or speed control.
- Monitors up to 20 cycles per second.
- Quick control from PLC via digital I/O.

- Fault analysis over 20 measuring cycles
- 256 sets of parameters
- Fast and safe data export (buffer) for process logging
- Offline data conversion into the following formats: XML, HTML, text, Excel with curve superposition and qs-STAT (dfq)
- Panel mounting
- Options
  - Desktop case
  - Profibus DP
  - Incremental and absolut (SSI) encoder for measuring displacement and angle

Short Description

CoMo View is a one-channel force and displacement measuring system for the monitoring and classification of industrial processes with 24 V industrial power supply. Six PLC-compatible digital inputs and outputs allow the system to be integrated into a machine control system. The CoMo View can be networked via TCP/IP and Ethernet. The RS-232C interface is used for test and service purposes and for connecting a barcode reader.

The touch screen color display is used on the one hand for process visualization and on the other for comprehensive setting of the parameters of the ControlMonitor. If a larger screen and thus a simpler menu system is preferred, a PC or web terminal with a standard web browser can be used for setting the parameters. The web server in the unit controls the HTML pages for the operating procedure. The access authorization to the various menu levels for operators, supervisors or servicing is password controlled.

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Condition Monitoring for Production Machines

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Process values and measuring curves can be sent in cycles to a data server in the network. The software service required for the data server is contained in the included accessories. In addition to other export criteria, a selection can be made as to whether the data for all parts or just for the conforming or nonconforming parts should be exported.

Process Evaluation with up to 12 Functions
Up to 12 evaluation functions of different types, such as boxes, thresholds, limit, dy/dt or dy/dx gradient, integral and hysteresis can be activated and freely combined in order to monitor a process. The point of intersection of the curve with each evaluation object can be displayed as a trend or statistic (mean, standard deviation, cp- or cpk-value). The server also allows corresponding process values to be displayed and saved in numerical form. The result of the process evaluation (OK/NOK) is available at the interfaces (digital outputs, Profibus DP or Ethernet) as a control signal.

Quality Assurance and Documentation
The process data related to a specific production order can be saved in the Kistler database CoMo MIS. Quality documents can be produced or current production statistically analyzed with the statistics module integrated in CoMo MIS. The integration of this database into MES/ERP systems is supported.

Measuring Amplifier x Channel (e.g. Displacement)
Voltage amplifier for potentiometric displacement sensor with its power supply from the control monitor. The measurands saved are evaluated after the cycle depending on the application selected.

Profibus DP (Extension Module)
System integration is possible via the Profibus (with a transmission rate up to 12 Mbaud), which can be provided as an optional extra. The following functions can be controlled:

Control
- Measuring cycle, Start/Stop
- Trigger for data storage
- Taring x,y
- Statistics/Trend deleting
- Query: Measuring readiness/status
- Choose measurement program
- Set reference signal for incremental encoder

Setup
- Evaluation function

Read
- Part identification

Outputs
- Status information
- Result of process evaluation
- Real-time results (x and y thresholds)
- 10 numerical process values

There is a choice of five different modes, which differ in terms of the amount of memory resources necessary for the input and output buffer of the PLC.

Mode	Bytes in	Bytes out	
Small1	2	3	–
Small2	4	10	–
Large1	12	26	Accommodates process values
Large2	24	50	Accommodates process values
Large3	40	50	Accommodates process values

Incremental SSI Encoder
Module for the optional connection of a linear, angle or rotary encoder for absolute or relative measurements. The SSI interface is supported for absolute measuring encoders. For incremental sensors, we support sensors with analog or digital signal output and with or without reference mark. No calibration or jumper settings are necessary. A Heidenhain-compatible connecting cable is available.

Compact Flash Memory Expansion Module


Slot for inserting a SanDisk compact flash card. Cards from 512 MB to 4 GB are supported. The memory expansion module currently serves as a FIFO buffer for data export and for storage of measuring programs inclusive process curves and results.

Calibration
The transmission factors of all amplifiers (charge, displacement and strain gauge) are checked within the scope of a function check against the capacitance and voltage references present in the CoMo View. If these are outside the tolerances specified, the CoMo View must be calibrated with an external charge or voltage source. All calibration values and other information such as the MAC address are stored in the EEPROM on the CA card.
The CoMo View has CE conformity and complies with EMC standards EN 61000-6-4 (interference emission, industrial areas) and EN 61000-6-2 (interference immunity, industrial areas). The interference immunity test has been conducted with an external ground. Inputs and outputs are protected with varistors against electrostatic charges. The degree of protection corresponds to IP20 and IP65 for the front with panel mounting.

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Block Schematic Diagram ControlMonitor CoMo View® Type 5863A2...

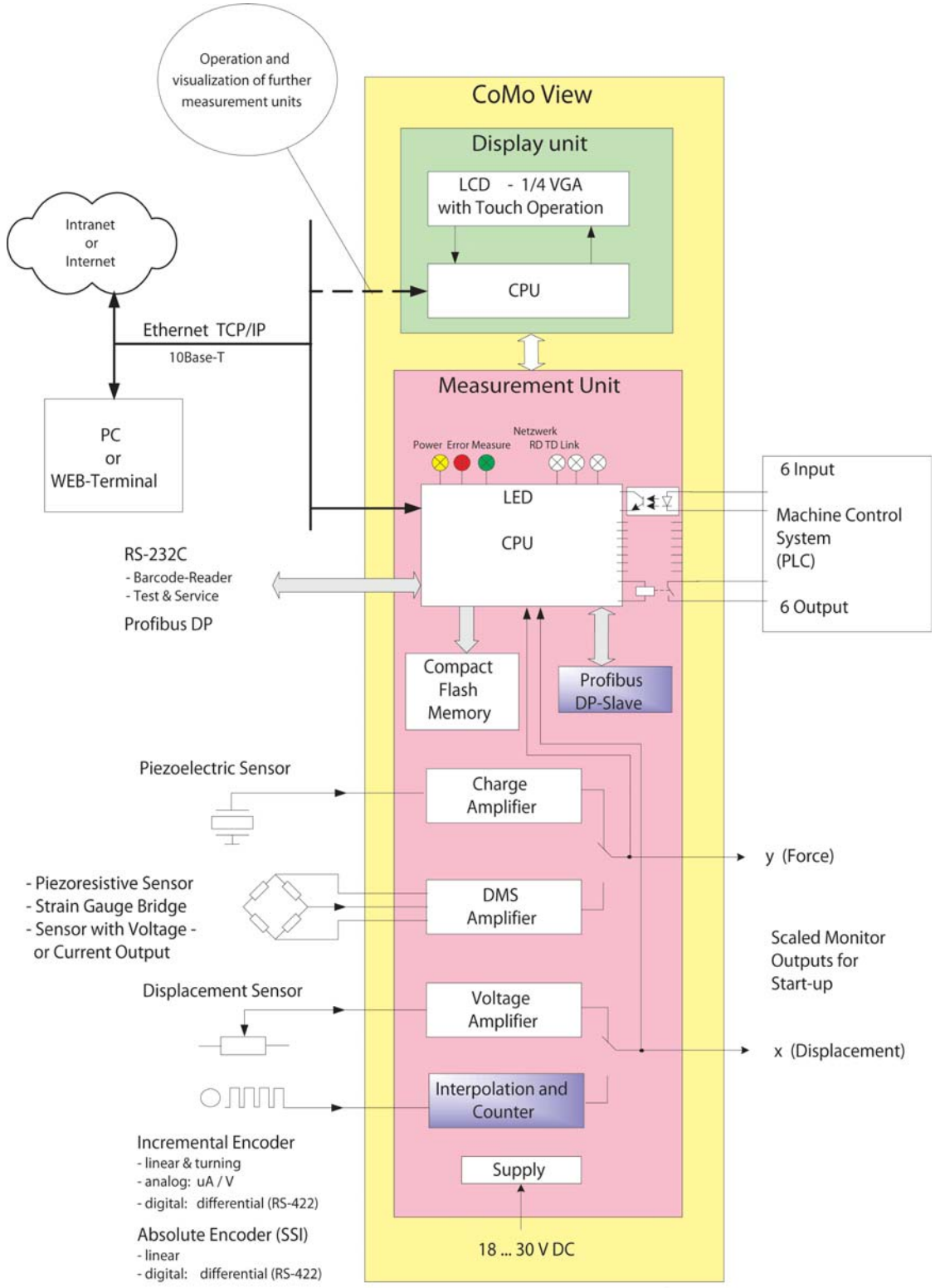

Fig. 1: Block schematic diagram ControlMonitor CoMo View Type 5863A2...

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Network Integration of Process Monitoring

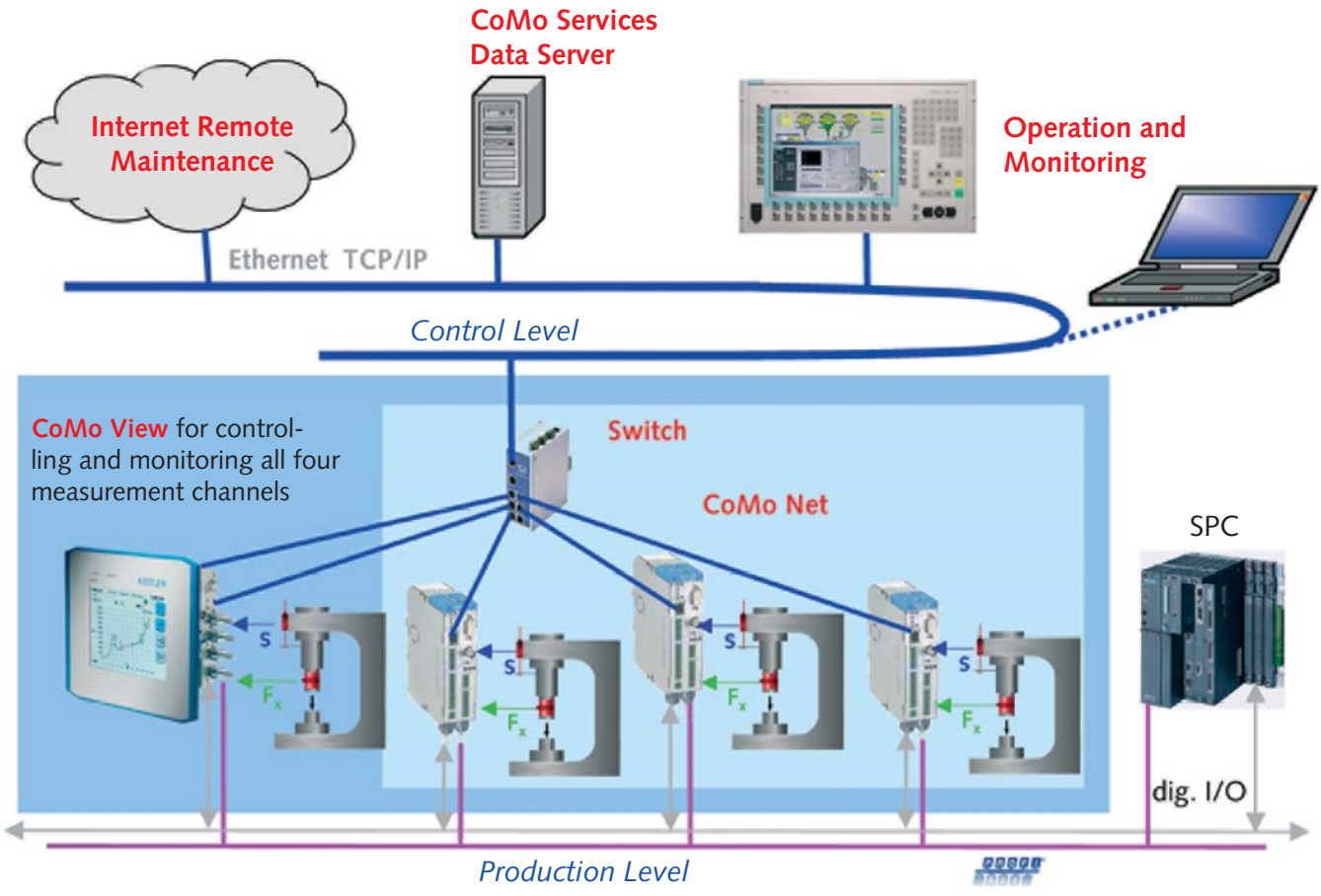

Fig. 2: Integration of single- or multi-channel process monitoring into a production network

Monitoring and Control

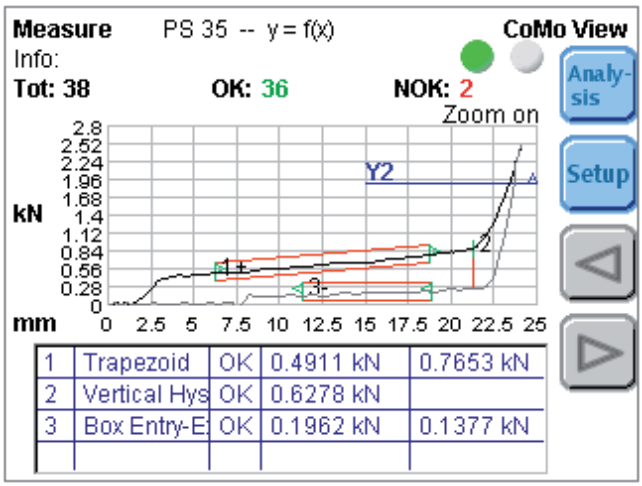

Fig. 3: Measure

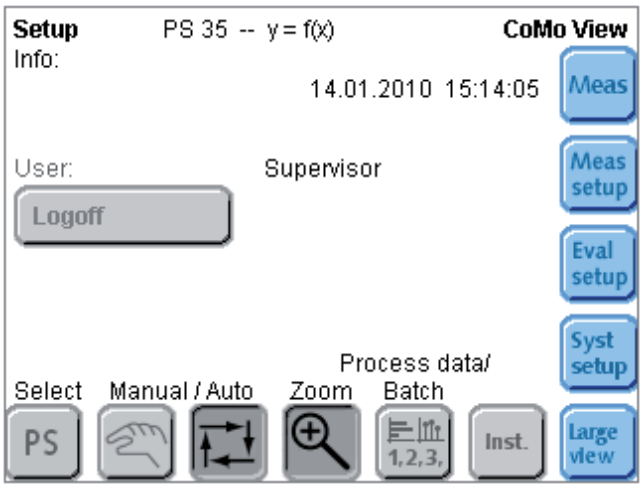

Fig. 4: Setting measurement

Evaluation Functions

Up to 12 evaluation functions of varying types such as boxes, thresholds, limit positions, gradients dy or dx and hysteresis can be activated and freely combined for the purpose of process monitoring.

The point of intersection of the curve with each evaluation object can be displayed as a trend or statistic (mean, standard deviation, cp- or cpk-value). The corresponding process values can be displayed and saved in numerical form. For process evaluation a good/bad control signal is triggered and passed to the interfaces (digital outputs, Profibus DP or Ethernet).

Limit Value Monitoring in Real Time

Real-time thresholds can be used to actuate trigger signals or, for example, to monitor safety criteria (such as overload protection).

Threshold	Quantity
	2
	4

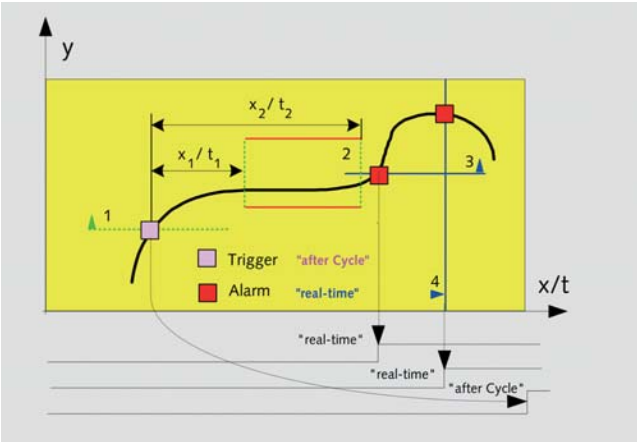

Fig. 5: Real-time threshold monitoring

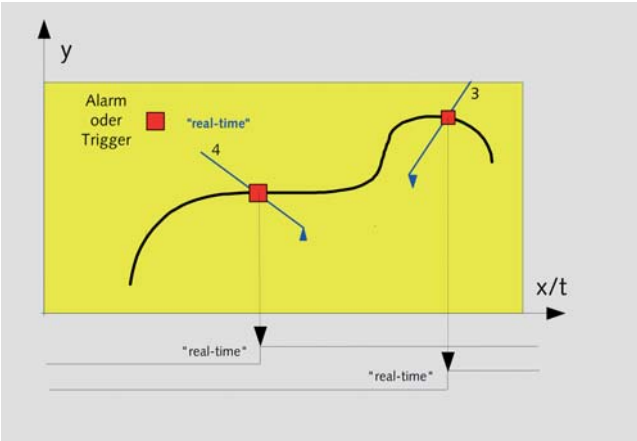

Fig. 6: Oblique real-time threshold

Post-Cycle Evaluation Functions and Process Values

Evaluation Function	Numeric Process Values
	Entry/exit point
	Point of intersection
	Stop position Maximum value in end position band
	Difference y_{max}-y_{min} Maximum value y,x resp. y,t Minimum value y,x resp. y,t
	Gradient dy/dx resp. dy/dt Integral ∫y(x).dx resp. ∫y(x).dt
	Hysteresis dy resp. dx

Further thresholds are used to monitor various partial ranges of the signal characteristic. Green thresholds have to be passed through in the direction of the arrow. Red thresholds must not be passed through. Evaluation takes place after the measuring cycle.

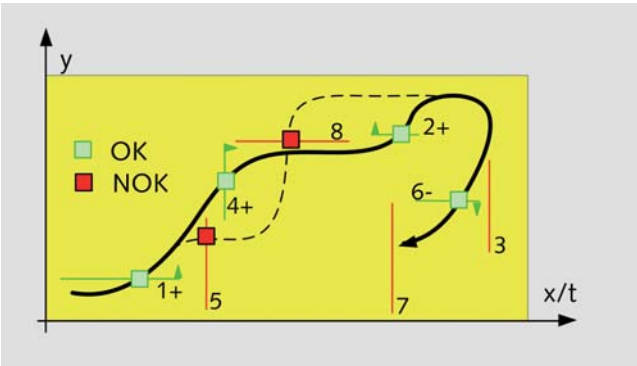

Fig. 7: Thresholds for monitoring partial ranges

Boxes

The box function is used to monitor whether the signal characteristic enters and exits the prescribed sides of the box. The other sides must not be touched.

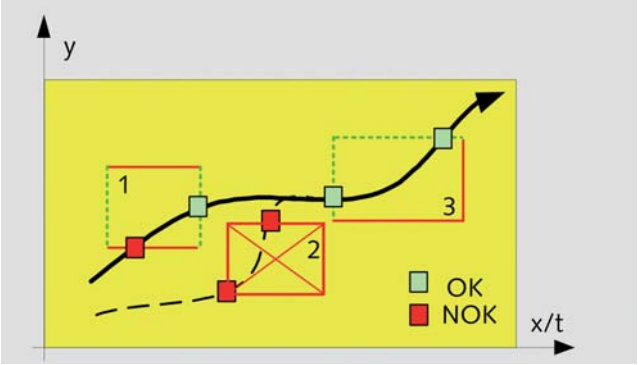

Fig. 8: Monitoring with box functions

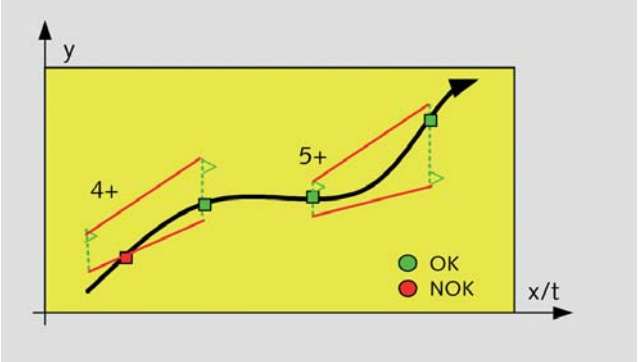

Fig. 9: Monitoring with inclined boxes

Stop Position

Checks whether the y- and x/t-coordinates of the last measuring point lie within the end position band or the end box if the upper limit is switched on.

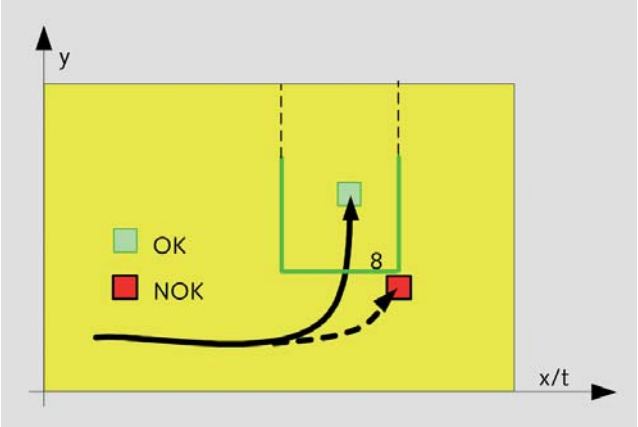

Fig. 10: Process values: coordinates of the stop position

Maximum Limit Box

Checks whether the y-maximum lies within the end box or the end position band.

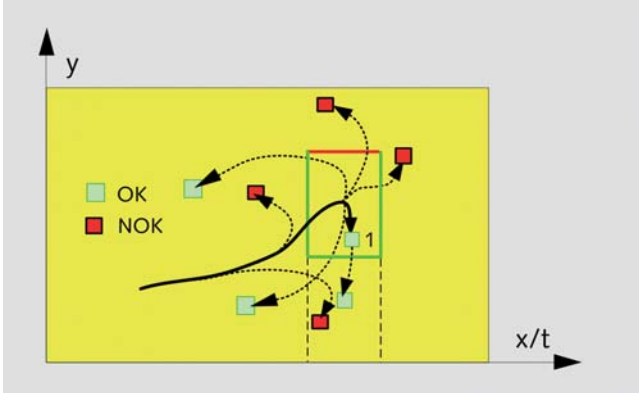

Fig. 11: Process values: maximum values within the end position band

Numerical Process Values

A maximum, minimum or relative maximum (difference between maximum and minimum) is determined and monitored within a box.

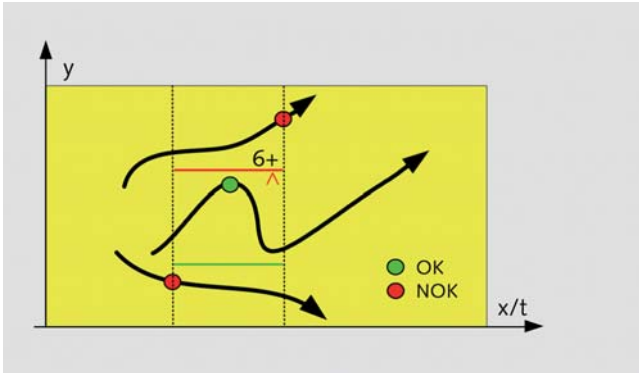

Fig. 12: Maximum

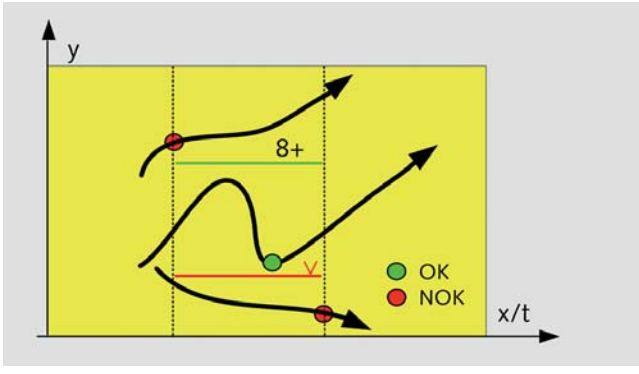

Fig. 13: Minimum

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The reference element for the relative maximum is the smallest measurand within the box limits.

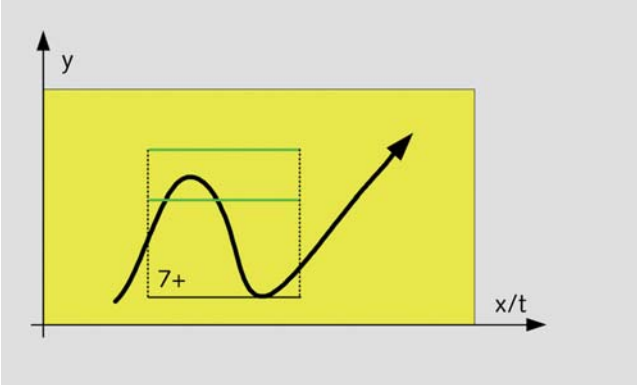

Fig. 14: Relative Maximum

Gradient

This evaluates the gradient of the curve between two vertical limits.

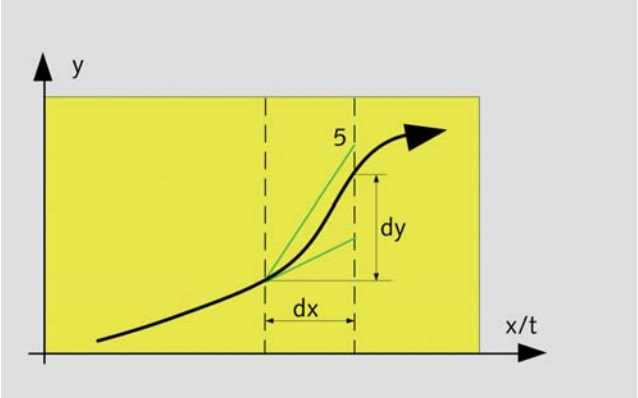

Fig. 15: Process value – gradient

Integral

This calculates the area below the measuring signal curve within the x and t limits respectively.

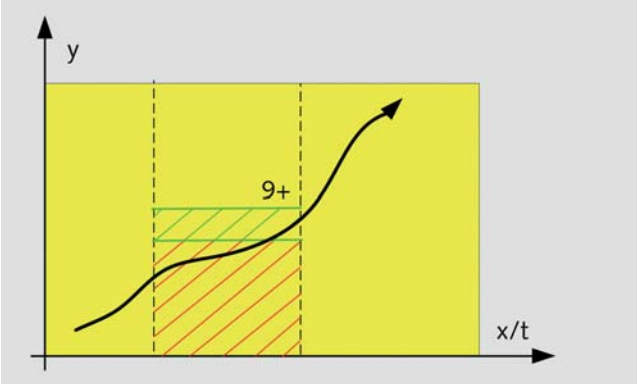

Fig. 16: Process value – integral

Hysteresis

The tolerance of the hysteresis is evaluated in the y or x direction at a specific position.

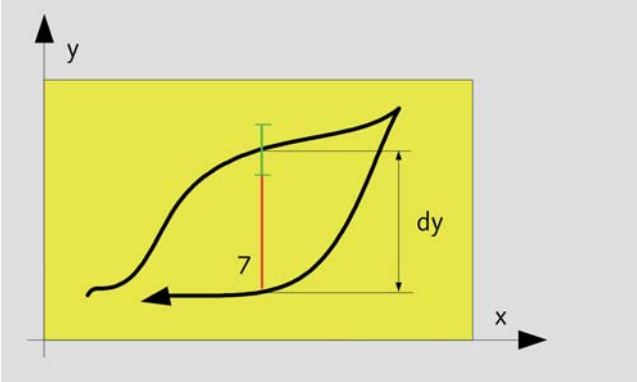

Fig. 17: Process value – dy

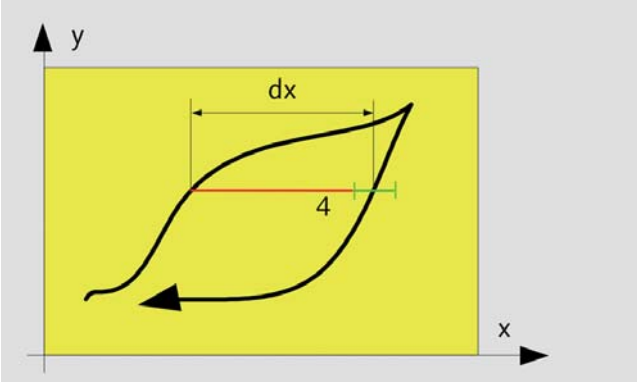

Fig. 18: Process value – dx

Setting Evaluation/Process Analysis

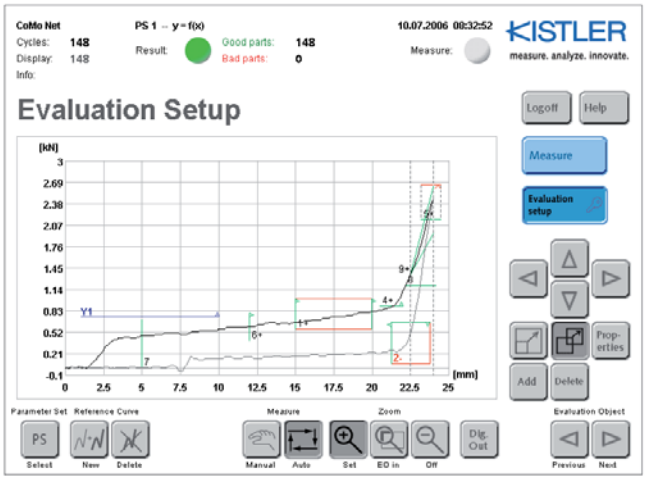

Fig. 19: Setting evaluation

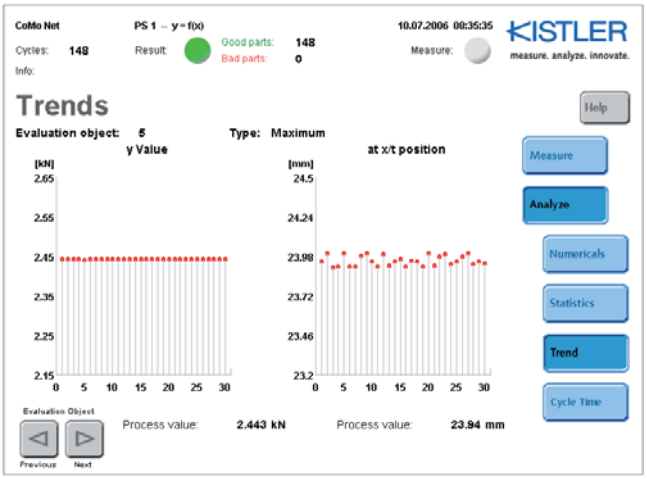

Fig. 22: Trend analysis

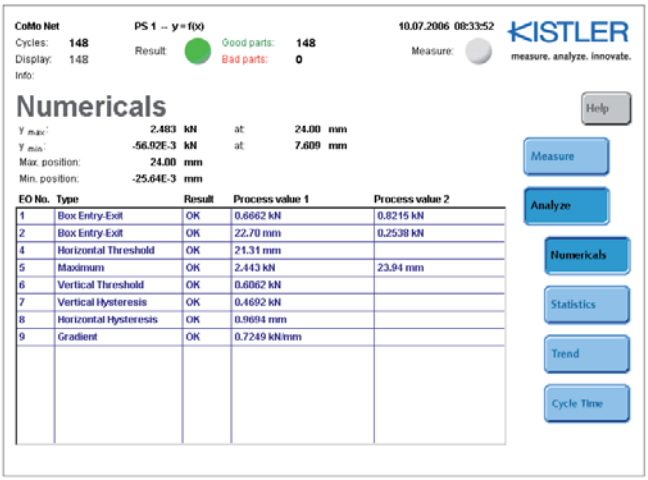

Fig. 20: Numerical analysis

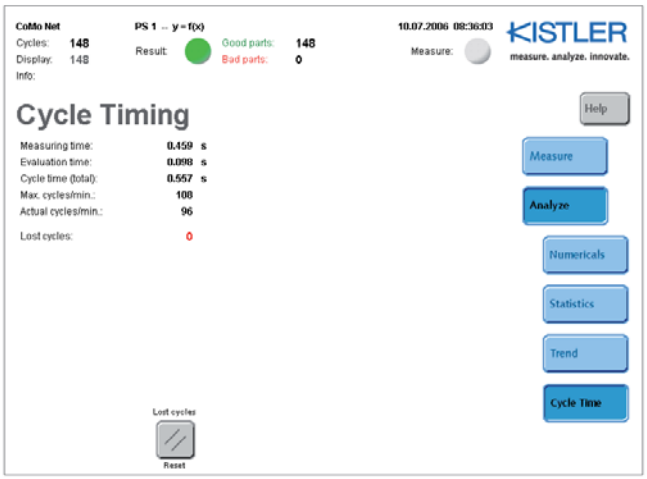

Fig. 23: Cycle time analysis

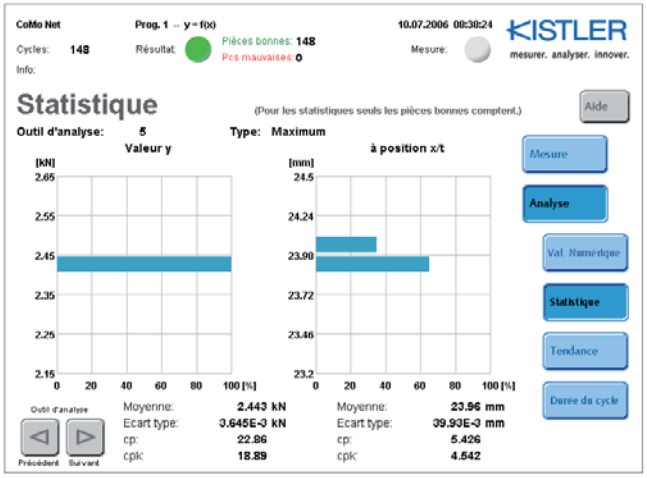

Fig. 21: Statistical analysis

Technical Data

Measuring Unit

Analog Inputs (General Data)		
Sampling rate per channel	kHz	10
Number of measuring values per cycle		100 ... 1 000
Resolution, analog/digital converter (21 V_{ss})	Bit	12

y Channel

Charge Amplifier for Piezoelectric Sensor (BNC)		
Measuring range (divided into 4-decade partial ranges)	pC	±100 … 1 000 000
Anti-aliasing filter, 2nd order	kHz	3
Error		
with calibration	%	<1
without calibration	%	<3
Repeat error	%FS	<0,1
Zero error and zero shift (Reset/Operate)	SW corrected	
Switching times		
Reset/Operate	ms	<5
Operate/Reset (Residual charge <0,5 % FS)	ms	<15
Drift		
at 25 °C	pC/s	<±0,1
at 50 °C	pC/s	<±0,5

Voltage Amplifier "Force" for Sensors with Voltage Output
(instead of charge amplifier)
Sensor types: Piezoresistive (current feed)
Strain gage bridge (voltage feed, 4 or 6 wire)
sensor with voltage or current output

Measuring range	V	±0,005 … ±10
Range subdivision		
Range 1	V	±0,005 … ±0,05
Range 2	V	±0,05 … ±0,5
Range 3	V	±0,1 … ±1,0
Range 4	V	±1,0 … ±10
Common Mode of the differential input stage	V	±18
Anti-aliasing filter, 2nd order	kHz	3
Error		
Range ±0,005 … ±0,05 V	%	<1,5
Range ±0,05 … ±10 V	%	<1
Max. input voltage (continuous)	V	±20
Taring function (voltage feed after differential stage)		
Voltage source (2 ranges), Resolution	V	±1, ±0,1 (0,05 %)
Zero offset referred to output ±10 V		
Scaling amplifier 1 … 10	V	±1 … ±10
Scaling amplifier >10 … 100	V	±1 … ±10

Current Source for Piezoresistive Sensor

Supply voltage between +Ex (10 V) and –IRef		
Output current	mA	–4
Error	%	<0,5
Load	kΩ	<4,7

Voltage Source for Strain Gage Bridge

Output voltage	V	5 or 10
Error	%	<0,5
Output current	mA	<40

Note
- The effective bridge voltage is measured and taken into account by the SW in the result (important for 6-wire connection).
- Shunt calibration with facility for switching in an external resistance.
- The sum of the currents for the strain gage bridge power supply and the potentiometric displacement sensor must not exceed 60 mA because of the device power loss.

x Channel

Voltage Amplifier for Potentiometric Displacement Sensor		
Measuring range	V	±0,5 … ±10
Repeat error	%FS	<0,1
Zero offset of the input signal, resolution	V	±10 (±0,02)
Anti-aliasing filter, 4th order	kHz	0,65
Voltage sources for displacement sensor power supply		2
Output voltage	V	–10/+10
Error	%	<0,2
Output current	mA	<20

Incremental Module (Option)		
Encoder counter	Bit	32
Sensor supply	V, mA	5, <80

Sensor Input, Analog (Differential) for Cable up to 30 m		
Interpolation factor	IF	1 ... 10
Max. frequency	kHz	250
Current signal A, B	μA_{pp}	5 … 16
z	μA_{pp}	2 … 8,5
Voltage signal A, B	V_{pp}	0,6 ... 1,2
z	V_{pp}	0,2 ... 0,85

Linear Sensor		
Grating period (GP) according to technical data for sensor	µm	1 … 9 999
Max. resolution A [A = GP/(IF·TF)] with GP = 10, IF = 10 and TF = 4	µm	0,25
Displacement (A · 4 100 000), bipolar	mm	±1 025
Min. resolution A [A = GP/(IF·TF)] with GP = 10, IF = 1 and TF = 1	µm	10
Displacement (A · 4 100 000) bipolar	mm	±41 000

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Rotary Encoder	
Number of pulses/rev. (PC) according to technical data for sensor	1 … 30 000
Max. resolution A [A = 360 °/(PC · IF · TF)]	
with PC = 360, IF = 10 and TF = 4)	0,025 °
Displacement angle (A · 4 100 000)	±102 500 °
Min. resolution A [A = 360 °/(PC · IF · TF)]	
with PC = 360, IF = 1 and TF = 1	1 °
Displacement angle (A · 4 100 000) bipolar	±4 100 00 °

Sensor Input, Digital (Differential)		
Signal A, B, Z	Level	RS-422A
Max. frequency	MHz	5

Linear Sensor		
Grating period (GP) according to technical data for sensor	µm	1 … 9 999
Max. resolution A [A = GP/(IF · TF)]		
with GP = 10 µm, IF = 1 without external interpolation TF = 4	µm	2,5
Displacement (A · 4 100 000) bipolar	mm	±10 250
Min. resolution A [A = GP/(IF · TF)]		
with GP = 10 µm, IF = 1 without external interpolation and TF = 1	µm	10
Displacement (A · 4 100 000) bipolar	mm	±41 000

Rotary Encoder	
Number of pulses/rev. (PC) according to technical data sensor	1 … 30 000
Max. resolution A [A = 360 °/(PC · IF · TF)]	
with PC = 360 and IF = 1 without external interpolation and TF = 4	0,25 °
Displacement angle (A · 4 100 000) bipolar	±1,025E6 °
Min. resolution A [A = 360 °/(PC · IF · TF)]	
with PC = 360 and IF = 1 without external interpolation and TF = 1	1 °
Displacement angle (A · 4 100 000) bipolar	±4,1E6 °

SSI Interface for Absolute Displacement Encoder		
Data and clock pulse	level	RS-422A
Frequency	MHz	1

Interfaces

Analog Monitor Outputs (2 mm Sockets, General Data)		2
Output current	mA	<3
Error (without error measuring amplifier)	%	0,5
Monitor output y (Force)		
Output voltage for FS input signal	V	±10
Zero offset	mV	<±10
Zero drift (Reset/Operate)	pC	<±0,5
Monitor output x (displacement corrected)		
Output voltage for FS input signal	V	0 … 10
Zero offset	mV	<±20

Digital Inputs (Optocouplers Electrically Isolated)		6
Debouncing	SW operated	
Logical input level, High	V	>14
Logical input level, Low	V	<8
Input current with 24 V	mA	5

Digital Outputs		6
(Photo MOS relay, electrically isolated, common return)		
Current carrying capacity, continuous	mA	<100
Current carrying capacity, pulsed <0,1 s	mA	<300
Resistance in on position	Ω	<50 (typ. 30)
Voltage	V	<40

Ethernet 10Base-T (electrically isolated)		
Transfer rate	Mbps	10
Topology	Twisted Pairs	2
LED displays for Receiver/Transmitter (RxD/TxD) and Link		2

Interface RS-232C	
(without control leads, level according to standard, electrically isolated)	
Baud rates	19 200
Data format	8 data bits, 1 stop bit, no parity

Profibus DP		
Interface	Type	RS-485A
max. transfer rate	MBaud	12

Memory Expansion Module		
Supported manufacturers		SanDisk
Name		Compact Flash Card
Size	MB	512 … 4 096

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CoMo View® (Measuring and Control Unit)

General

Evaluation time (according to number of functions)	ms	ca. 16 … <500
Parameter sets		256
Parameter set switching via digital inputs	ms	35
Display for web terminal		SVGA (800x600)
Operating temperature range	°C	0 … 50
Power supply	VDC	18 … 30
	W	ca. 12
Voltage between power supply connections and case	V_{rms}	<40
Case		
for front panel mounting (BxHxT)	mm	207x172x105
Desktop case option (BxHxT)	mm	220x184x180
Degree of protection	IP	20
Front in panel mounting	IP	65
Desktop case Type 5745A2	IP	65
Weight (without case)	kg	0,8

Connections

Charge input		
for piezoelectric sensor	Type	BNC neg.
Voltage amplifier "Force"	Type	Phoenix 3,5 mm
for sensors with voltage output (Piezoresistive sensor, strain gage bridge or other)		
Potentiometric displacement sensor	Type	Phoenix 3,5 mm
Incremental displacement sensor	Type	D-Sub-15P
Absolute displacement sensor	Type	D-Sub-15P
Monitor outputs		
x = Displacement corrected	Type	2 mm test socket
y = Force (charge amplifier or strain gage)		
Digital outputs, qty. 6	Type	Phoenix 3,5 mm
Digital inputs, qty. 6	Type	Phoenix 3,5 mm
Equipment supply	Type	Phoenix 3,5 mm
Interface, Ethernet 10Base-T	Type	RJ45
Interface, RS-232C	Type	D-Sub-9S
Profibus DP	Type	D-Sub-9S

Note

- Compliance with the recommendations in the operating instructions is required for EMC.
- For EMC compatible applications, the electrically isolated measuring circuit can be connected by means of the screw connection, M2,5x5 under the input BNC instead of being connected to the case (protective ground).

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Dimensions ControlMonitor CoMo View® Type 5863A2...

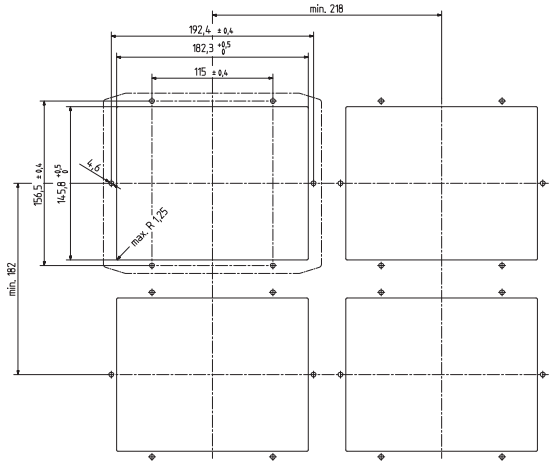

Fig. 24: Cut-out dimensions for panel mounted version

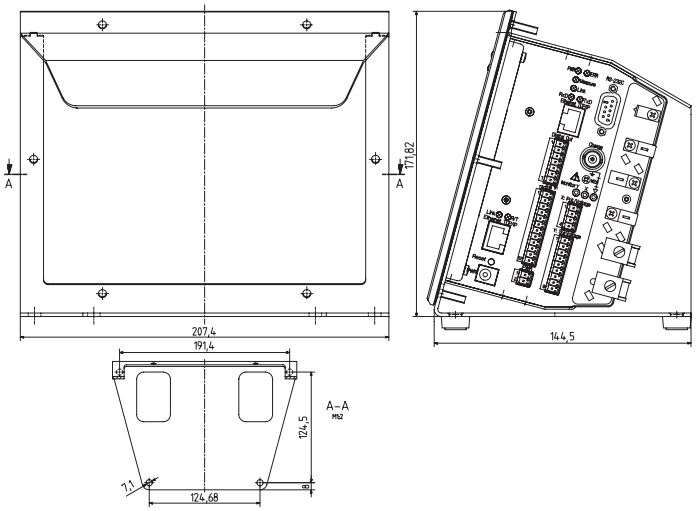

Fig. 25: Desktop case Type 5745A0

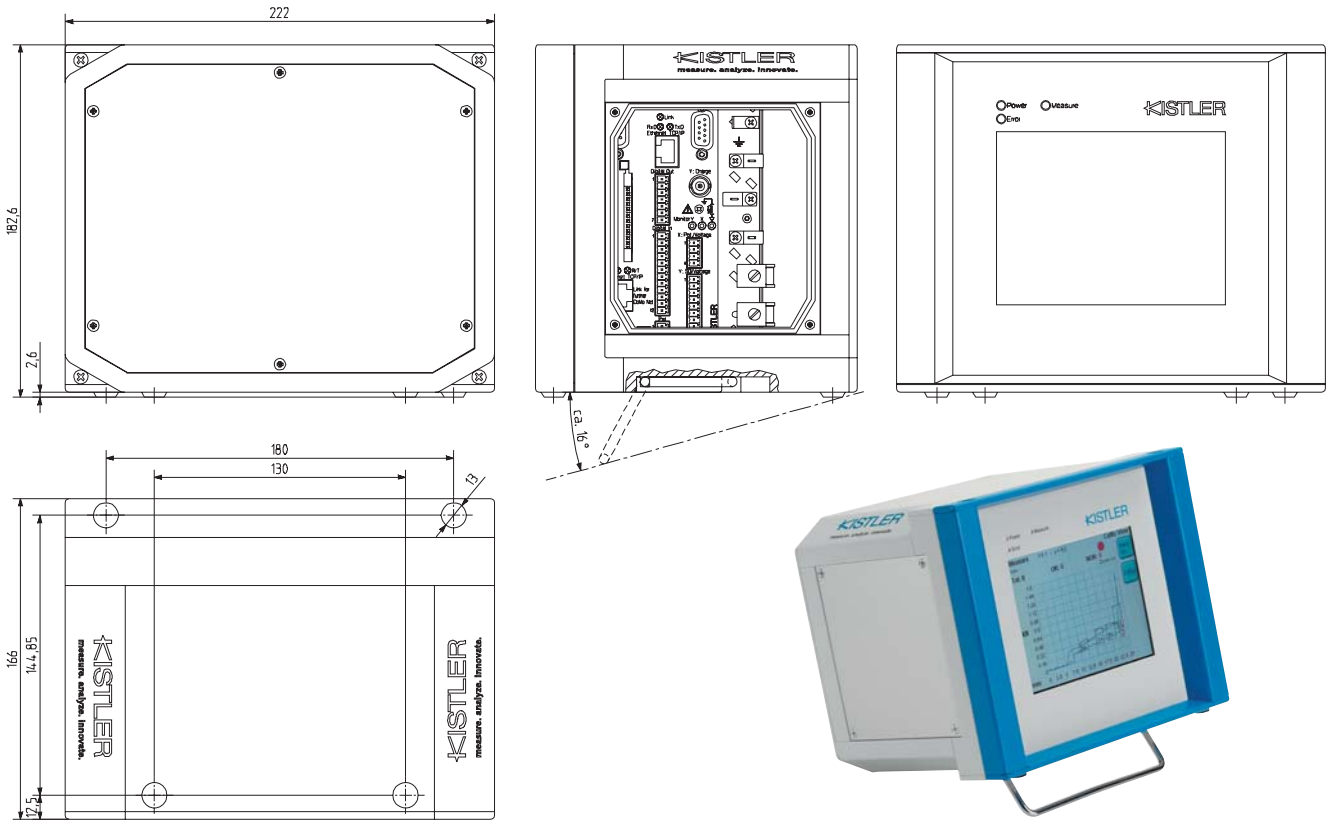

Fig. 26: Desktop case with removable rear and side panels, Type 5745A2, degree of protection IP65

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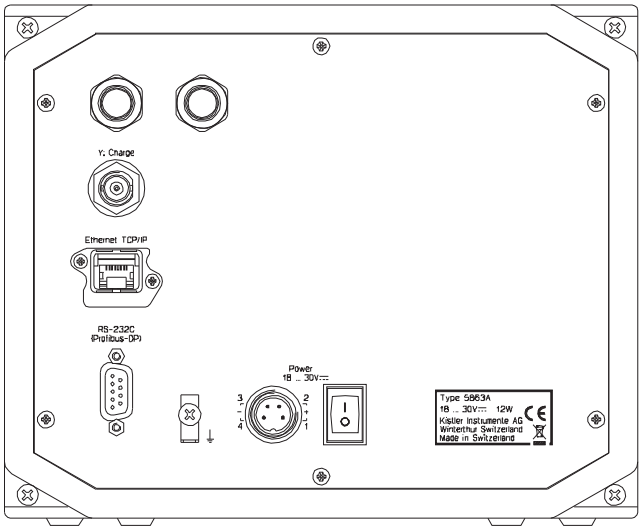


Fig. 27: Desktop case with partial rear panel wiring and two cable ducts Type 5745A21, degree of protection IP54

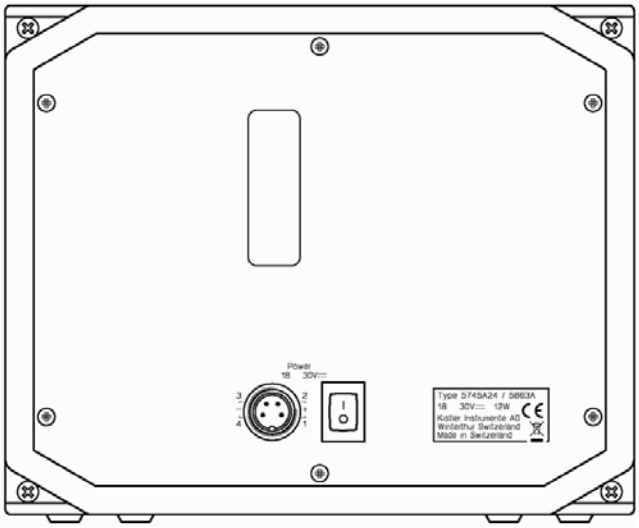


Fig. 29: Desktop case with open cable duct Type 5745A24

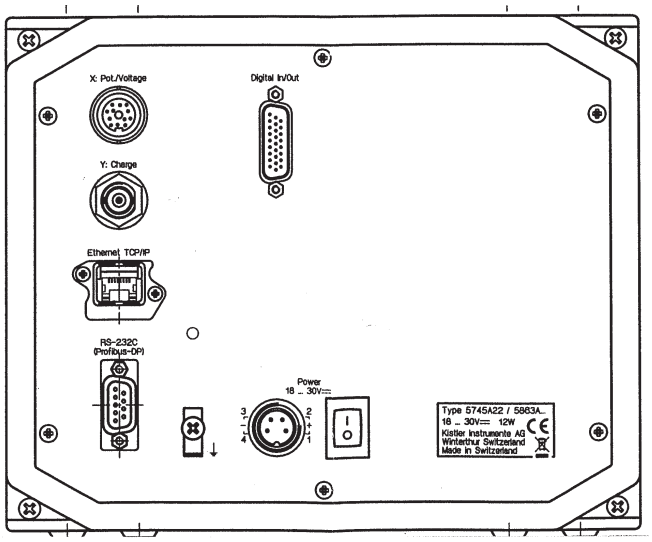


Fig. 28: Desktop case Type 5745A22, suitable for CoMo II

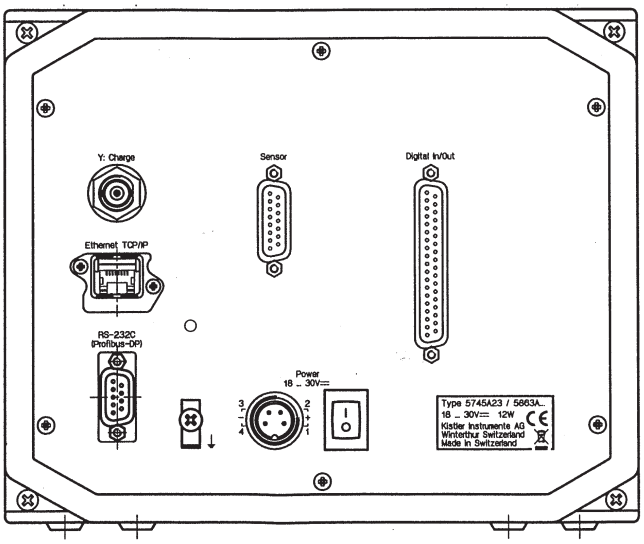
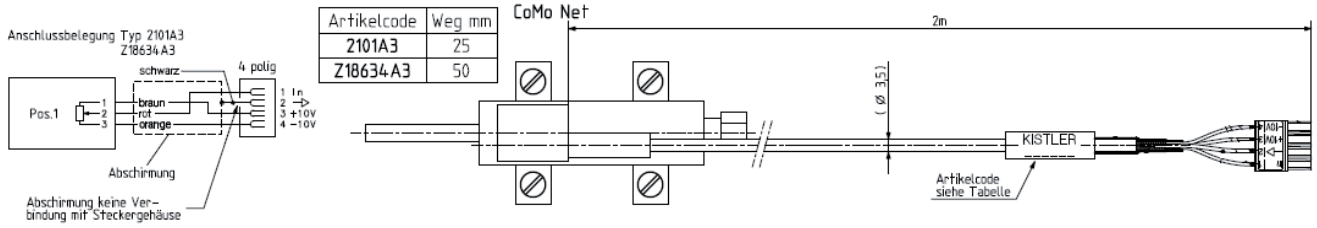


Fig. 30: Desktop case Type 5745A23, suitable for CoMo II-S

Displacement Sensors

Type 2101A3
Type Z18634A3

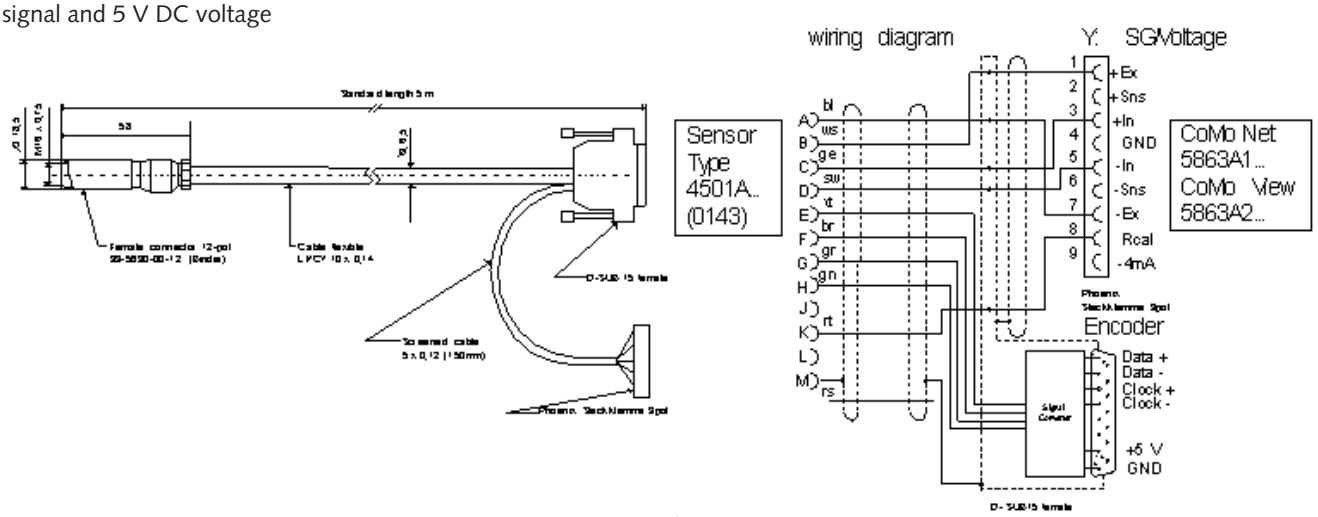
Potentiometric displacement sensor with 25 mm and 50 mm displacement.



Connecting Cables

Type 1200A121A1

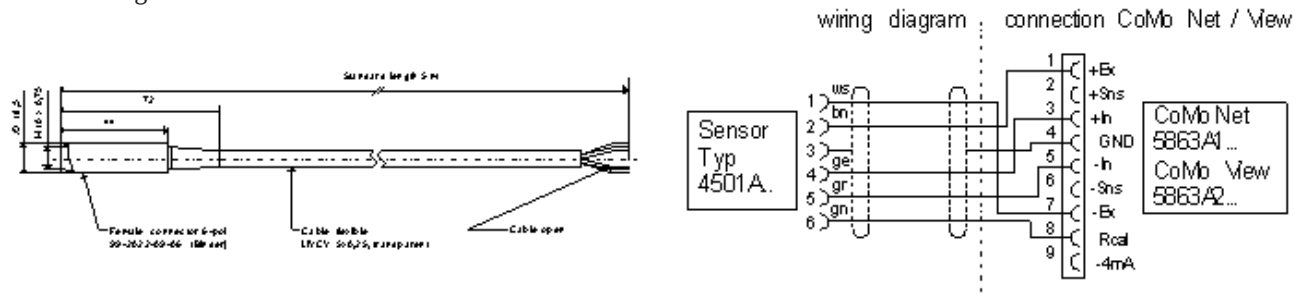
Connecting cable for a torque sensor with slipring and **angle measurement** Type 4501A… Version QA/HA with ±2 mV/V output signal and 5 V DC voltage



Cable connector	M16x0,75, 12 Pin – D-Sub female, 15 Pin/Phoenix 3,5 mm, 9 Pin
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

Type KSM103820-5

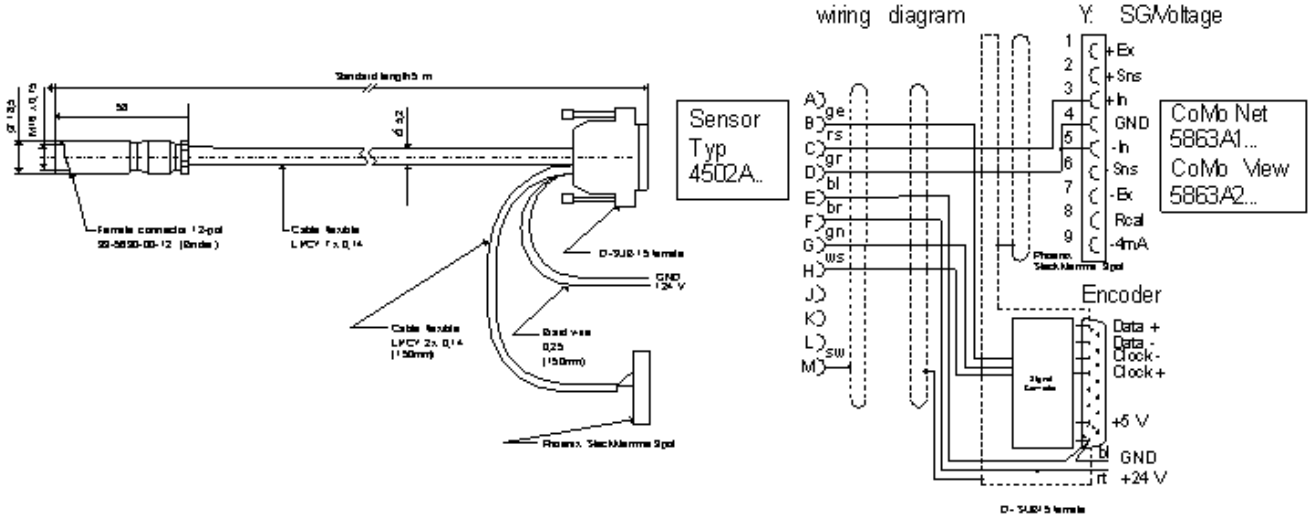
Connecting cable for a torque sensor with slipring **without angle measurement** Type 4501A… with ±2 mV/V output signal and 5 V DC voltage



Cable connector	M16x0,75, 6 Pin – open end
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

Type 1200A121A2

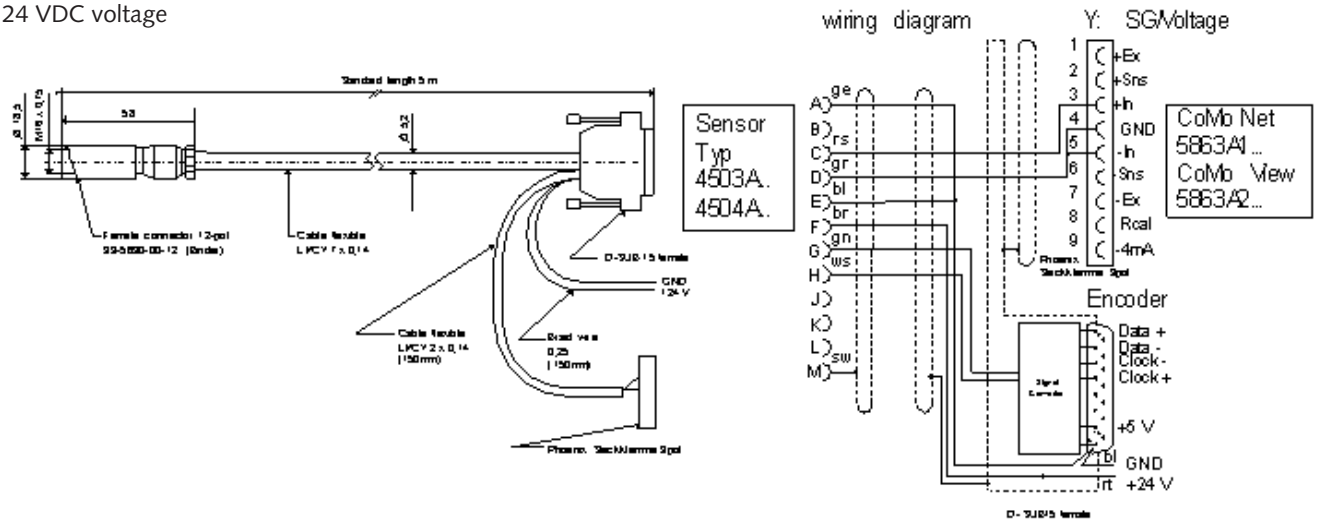
Connecting cable for a MiniSmart torque sensor **with angle measurement** Type 4502A… version QA/HA/RA/RAU and ±5 VDC output signal and 24 VDC voltage



Cable connector	M16x0,75, 12 Pin – D-Sub female, 15 Pin/Phoenix 3,5 mm, 9 Pin/2 wire with open end
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

Type 1200A121A3

Connecting cable for a MiniSmart torque sensor **with angle measurement** Type 4503A_B1000 and ±10 VDC output signal and 24 VDC voltage



Cable connector	M16x0,75, 12 Pin – D-Sub female, 15 Pin/Phoenix 3,5 mm, 9 Pin/2 wire with open end
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

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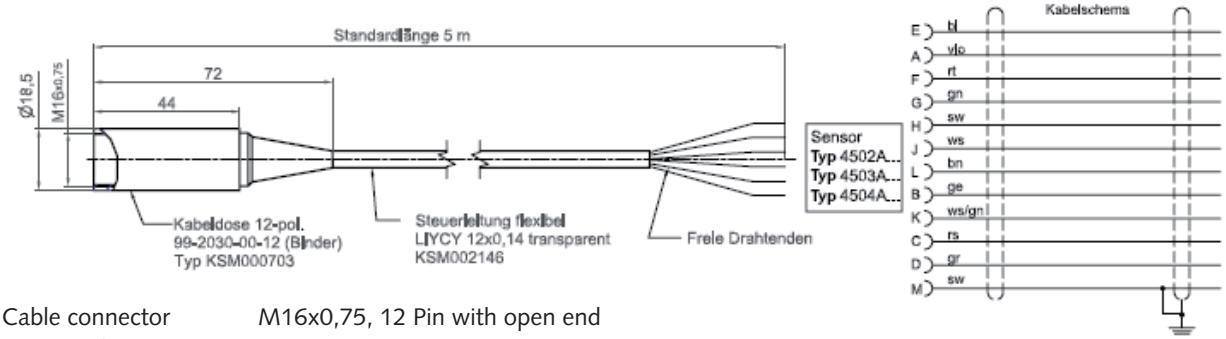
Type KSM124970-5

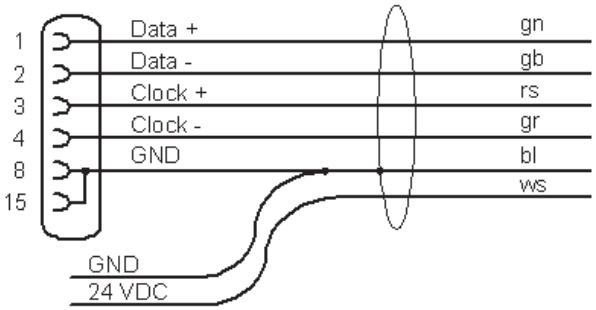
Connecting cable for a MiniSmart torque sensor without angle measurement Type 4502A… version Q/R/H with ±5 V output signal and 5 VDC voltage, Type 4503A__B1000 with ±10 V output signal and 24 VDC voltage, Type 4504A__B10000 with ±10 V output signal and 24 VDC voltage



Cable connector	M16x0,75, 12 Pin with open end
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

Type Z20722A1

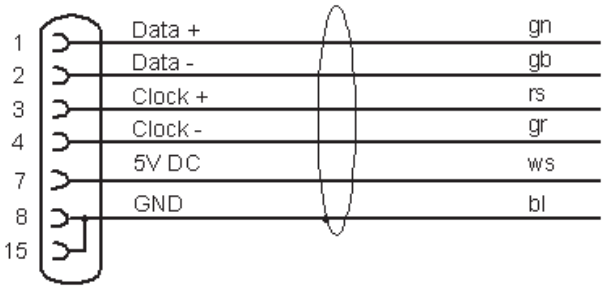
Connecting cable for an absolute displacement sensor with SSI-interface and 24 VDC voltage



Cable connector	D-Sub female, 15 Pin with open end
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

Type Z20722A2

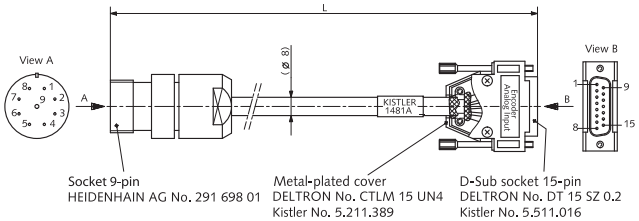
Connecting cable for an absolute displacement sensor with SSI-interface and 5 VDC voltage

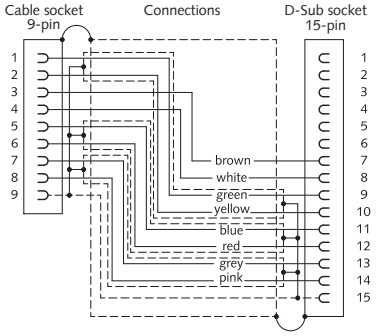


Cable connector	D-Sub female, 15 Pin with open end
Degree of protection (EN60529)	IP40
Temperature	0 … 70 °C

Type 1481Ax

Connecting cable for incremental displacement sensor, (Heidentain MT series, …)





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Optional Accessories

Case	Type
• Desktop case set	5745A0
• Desktop case IP65	5745A2
• Desktop case with partial rear panel wiring and two cable ducts IP54	5745A21
• Desktop case suitable for Como II	5745A22
• Desktop case suitable for Como II-S	5745A23
• Desktop case with open cable duct	5745A24

Displacement Sensors	Type
• Potentiometric displacement sensor with Phoenix connector 4-pin	
25 mm	2101A3
50 mm	Z18634A3
• For more displacement sensors please check www.Kistler.com, Search term: displacement sensor	
• Connecting cable for incremental displacement sensor compatible with Heidenhain Type MT…	
Length = 1 m	1481A1
Length = 2 m	1481A2

Connecting Cable	Type
• Connecting cable for torque sensor Type 4501A… Version QA/HA with angle measurement,	
Length = 5 m	1200A121A1
Length = sp (l_{min} = 0,5 m, l_{max} = 5 m)	1200A121A1sp
• Connecting cable for torque sensor Type 4501A… Version Q/R/H without angle measurement	
Length = 5 m	KSM103820-5
• Connecting cable for torque sensor Type 4502A… Version QA/HA/ RA/RAU, with angle measurement,	
Length = 5 m	1200A121A2
Length = sp (l_{min} = 0,5 m, l_{max} = 5 m)	1200A121A2sp
• Connecting cable for torque sensor Type 4503A3__B1000, with angle measurement,	
Length = 5 m	1200A121A3
Length = sp (l_{min} = 0,5 m, l_{max} = 5 m)	1200A121A3sp
• Connecting cable for torque sensor Type 4502A… Version Q/R/H, Typ 4503A__B1000 oder Typ 4504A__B10000 without angle measurement,	
Length = 5 m	KSM124970-5
• Connecting cable for an absolute displacement with SSI-interface, with 24 VDC voltage, Length = 5 m (open end)	Z20722A1
• Connecting cable for an absolute displacement with SSI-interface with 5 VDC voltage Length = 5 m (open end)	Z20722A2
• RS-232C cable, null modem, D-Sub-9P/D-Sub-9S, Length 5 m	1200A27

Simulation Hardware	Type
• Simulator for feeding in force and displacement signals	Z15822
• Cable set suitable for Type Z15822	Z17862-1
	Z17862-2

Optional Accessories	Type
CD-ROM with Software Manufacturing Information System (MIS) for storing of production data in a database. The statistic tool (included in scope of delivery) analyses the production data and clearly describes the production status.	on demand

Ordering Key

Type 5863A ☐

CoMo View® Base Unit Network connection via Ethernet 10 Mbit/s interface with RJ45 port, 2-channel amplifier, y measuring channel for charge, voltage and strain gage, x measuring channel for voltage and potentiometric sensor with built-in Compact Flash 4.0 GB memory expansion	**20**
CoMo View® Base Unit with built-in **Profibus DP interface**	**21**
CoMo View® Base Unit with **incremental module** for connecting absolute and relative displacement sensor, input signal (analog Vpp, Ipp or digital)	**23**
CoMo View® Base Unit with built-in **Profibus DP interface** with **incremental input** for connecting absolute and relative displacement sensor input signal (analog Vpp, Ipp or digital)	**25**

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