



More Precision

capa**NCDT** // Capacitive displacement sensors and systems





- Modular, expandable for up to 4 channels
- Ethernet / EtherCAT interface
- Easy configuration using the web browser
- Resolution up to 0.0005 % FSO
- Bandwidth: up to 20 kHz
- Digital data rate: 4 x 3.9 kSa/s
- Trigger feature
- Synchronous operation supported

System design

The new capaNCDT 6200 is a modular measuring system that offers excellent performance at a very attractive price. A modular design enables the system to be expanded at any time by up to four measuring channels. The measuring system includes a control unit and a demodulator for each sensor. The Ethernet interface integrated in the controller enables fast, easy configuration via web browser. The DL6230 demodulator provides high resolution measurements. The capaNCDT 6222 is used for high speed measurements up to 20 kHz.

The compact controller can be used as a benchtop unit, wall-mounted unit or DIN rail-mounted via an adapter. The capaNCDT 6200 is compatible with all sensor models from Micro-Epsilon.



Web interface

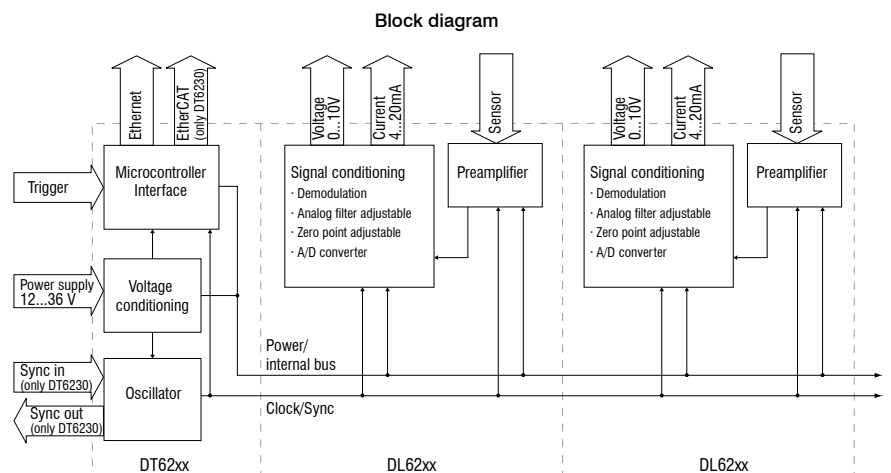
The web interface for controller configuration opens via Ethernet. Up to 8 channels can be visualized and linked arithmetically.

A measuring system consists of:

- Control unit DT62xx
- Demodulator DL62xx
- Sensor
- Sensor cable
- Power supply cable
- Ethernet cable EtherCAT cable
- Signal output cable

Accessories:

- Signal output cable
- Power supply cable
- DIN rail brackets
- mounting plates for wall mounting

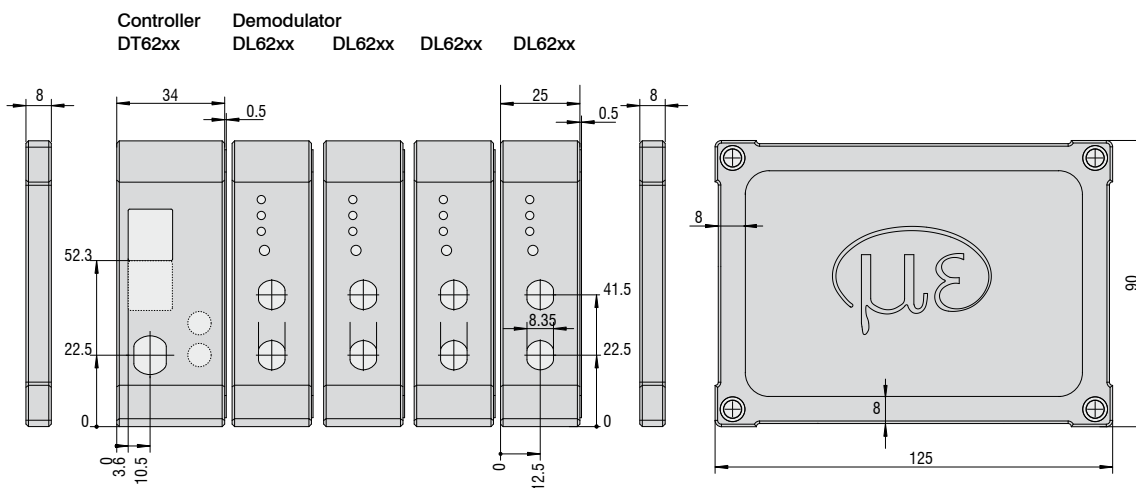


| Controller type DT62x0 | Demodulator DL6220 | Demodulator DL6230 |
|--------------------------------------|---|---|
| Resolution static | 0.004 % FSO | 0.0005 % FSO |
| Resolution dynamic | 0.02 % FSO (5 kHz) | 0.005 % FSO (5 kHz) |
| Bandwidth | 5 kHz (-3 dB) | 5 kHz (-3 dB) |
| Bandwidth (switchable) | 5 kHz, 20 Hz | 5 kHz, 20 Hz |
| Data rate digital output | max. 3.906 kSa/s | max. 3.906 kSa/s |
| Linearity (typ.) | $\leq \pm 0.05$ % FSO | $\leq \pm 0.025$ % FSO |
| Sensitivity deviation | $\leq \pm 0.1$ % FSO | $\leq \pm 0.1$ % FSO |
| Long-term stability | ≤ 0.02 % FSO/month | ≤ 0.02 % FSO/month |
| Synchronous operation supported | DT6220 | yes (only internal) |
| | DT6230 | yes |
| Insulator measurement | no | no |
| Temperature stability | 200 ppm | 200 ppm |
| Temperature range (during operation) | Sensor | -50 ... + 200 °C |
| | Controller | +10 ... +60 °C |
| Temperature range (storage) | -10 ... +75 °C | -10 ... +75 °C |
| Supply | DT6220 | 24 VDC (12 ... 36 VDC) |
| | DT6230 | 24 VDC (15 ... 36 VDC) |
| Power consumption | per DL62x0 | 1.8 W (typ.); 2.0 W (max.) |
| | DT6220 | 3.1 W (typ.) |
| | DT6230 | 3.8 W (typ.) |
| Analog output | | 0 ... 10 V (short circuit proof) |
| | | 4 ... 20 mA (load max. 500 Ohm) |
| Digital interface | DT6220 | Ethernet |
| | DT6230 | Ethernet + EtherCAT |
| Sensors | suitable for all sensors | suitable for all sensors |
| Sensor cable standard | CC cable ≤ 1 m CCm cable = 1.4 m CCg cable = 2 m | CC cable ≤ 1 m CCm cable = 1.4 m CCg cable = 2 m |
| Sensor cable (special tuning) | double / triple standard cable length | double / triple standard cable length |
| Trigger | TTL, 5 V | TTL, 5 V |
| No. of channels | max. 4 | max. 4 |

FSO = Full Scale Output

| Controller type DT6222 | Demodulator DL6222 | Demodulator DL6222/ECL2 |
|--|---|---|
| Resolution static | 0.004 % FSO | 0.004 % FSO |
| Resolution dynamic | 0.05 % FSO (20 kHz) | 0.1 % FSO (20 kHz) |
| Bandwidth | 20 kHz (-3 dB) | 20 kHz (-3 dB) |
| Bandwidth (switchable) | 20 kHz, 20 Hz | 20 kHz, 20 Hz |
| Data rate digital output | max. 3.906 kSa/s | max. 3.906 kSa/s |
| Linearity (typ.) | $\leq \pm 0.1$ % FSO | $\leq \pm 0.2$ % FSO |
| Sensitivity deviation | $\leq \pm 0.1$ % FSO | $\leq \pm 0.1$ % FSO |
| Long-term stability | ≤ 0.02 % FSO/month | ≤ 0.02 % FSO/month |
| Synchronous operation supported (multiple controllers) | no | no |
| Insulator measurement | no | no |
| Temperature stability | 200 ppm | 200 ppm |
| Temperature range (during operation) | Sensor -20 ... +200 °C Controller +10 ... +60 °C | -20 ... +200 °C +10 ... +60 °C |
| Temperature range (storage) | -10 ... +75 °C | -10 ... +75 °C |
| Supply | 24 VDC (12 ... 36 VDC) | 24 VDC (12 ... 36 VDC) |
| Power consumption | DT6222 2.8 W (typ.) per DL6222 1.2 W (typ.); 1.4 W (max.) | 2.8 W (typ.) 1.2 W (typ.); 1.4 W (max.) |
| Analog output | 0 ... 10 V (short circuit proof) 4 ... 20 mA (load max. 500 Ω) | 0 ... 10 V (short circuit proof) 4 ... 20 mA (load max. 500 Ω) |
| Digital interface | Ethernet | Ethernet |
| Sensors | suitable for all sensors | suitable for all sensors |
| Sensor cable standard | CCm1,4x; CCg2,0x | CCm2,8x; CCg4,0x |
| Sensor cable (special tuning) | ≤ 2.8 m (with CCmxx) ≤ 4.0 m (with CCgxx) | ≤ 2.8 m (with CCmxx) ≤ 4.0 m (with CCgxx) |
| Trigger | TTL, 5 V | TTL, 5 V |
| No. of channels | max. 4 | max. 4 |

FSO = Full Scale Output



| Options | | | | | | |
|----------|-------------------|--|-----------------------|------------------------|------------------------|----------------------|
| Art. No. | Description | Description | Suitable for articles | | | |
| | | | 2303018 DL6220 | 2303022 DL6220/ECL2 | 2303023 DL6220/ECL3 | 2303029 DL6220/LC |
| 2982044 | LC DL62x0 digital | special calibration of linearity on digital output | ○ | ○ | ○ | ● |
| 2982045 | LC DL62x0 analog | special calibration of linearity on analog output | ○ | ○ | ○ | ● |
| 2982046 | ECL2 DL6220 | special tuning for double standard cable length (CC = 2 m / CCm = 2.8 m / CCg = 4 m) | - | ● | - | ● |
| 2982047 | ECL3 DL6220 | special tuning for triple standard cable length (CC = 3 m / CCm = 4.2 m / CCg = 6 m) | - | - | ● | ● |
| 2982048 | EMR2 DL6220 | extended measuring range (factor: 2) contains LC DL62x0 digital and LC DL62x0 analog | ○ | ○ | ○ | ● |
| 2982049 | RMR1/2 DL6220 | reduced measuring range (factor: 1/2) contains LC DL62x0 digital and LC DL62x0 analog | ○ | ○ | ○ | ● |

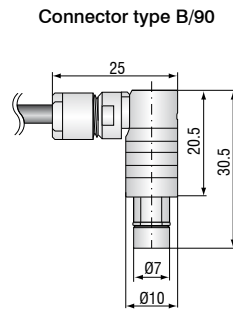
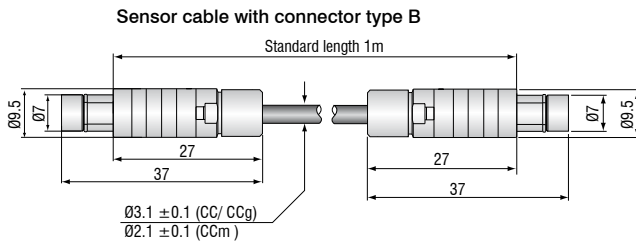
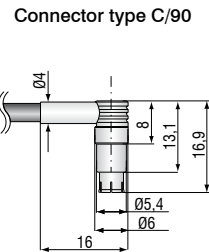
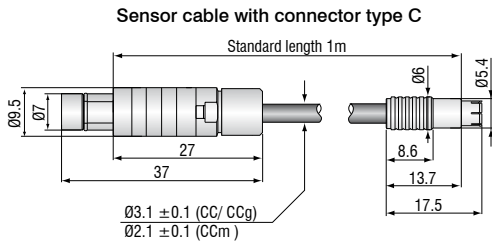
| Art. No. | Description | Description | Suitable for articles | | | |
|----------|-------------------|--|-----------------------|------------------------|------------------------|----------------------|
| | | | 2303019 DL6230 | 2303024 DL6230/ECL2 | 2303025 DL6230/ECL3 | 2303030 DL6230/LC |
| 2982044 | LC DL62x0 digital | special calibration of linearity on digital output | ○ | ○ | ○ | ● |
| 2982045 | LC DL62x0 analog | special calibration of linearity on analog output | ○ | ○ | ○ | ● |
| 2982054 | ECL2 DL6230 | special tuning for double standard cable length (CC = 2 m / CCm = 2.8 m / CCg = 4 m) | - | ● | - | ● |
| 2982055 | ECL3 DL6230 | special tuning for triple standard cable length (CC = 3 m / CCm = 4.2 m / CCg = 6 m) | - | - | ● | ● |
| 2982051 | EMR2 DL6230 | extended measuring range (factor: 2) contains LC DL62x0 digital and LC DL62x0 analog | ○ | ○ | ○ | ● |
| 2982052 | EMR3 DL6230 | extended measuring range (factor: 3) contains LC DL62x0 digital and LC DL62x0 analog | ○ | ○ | ○ | ● |
| 2982053 | RMR1/2 DL6230 | reduced measuring range (factor: 1/2) contains LC DL62x0 digital and LC DL62x0 analog | ○ | ○ | ○ | ● |

| Art. No. | Description | Description | Suitable for articles | | |
|----------|------------------|---|-----------------------|------------------------|----------------------|
| | | | 2303035 DL6222 | 2303036 DL6222/ECL2 | 2303038 DL6222/LC |
| 2982045 | LC DL62x0 analog | special calibration of linearity on analog output | ○ | ○ | ● |
| 2982059 | ECL2 DL6222 | special tuning for double standard cable length | - | ● | ● |
| 2982061 | EMR2 DL6222 | extended measuring range (factor: 2) | ○ | ○ | ● |
| 2982062 | RMR1/2 DL6220 | reduced measuring range (factor: 1/2) | ○ | ○ | ● |

- Articles already contain the option
- Option available
- No option available

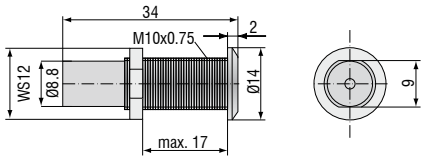
| Sensor cable | Cable CCx,x / CCx,x/90 | Cable CCmx,x / CCmx,x/90 | Cable CCgx,x / CCgx,x/90 |
|-----------------------|--|---|--|
| Description | Low-outgassing cable up to 4 m length, for applications in clean rooms | Low-outgassing cable up to 4.2 m length, for applications in clean rooms, UHV and EUV | Robust cable up to 8 m length, for industrial applications |
| Temperature stability | -100 °C to +200 °C | -100 °C to +200 °C | -20 °C to +80 °C (permanent) -20 °C to +100 °C (10;000 h) |
| Outer diameter | 3.1 mm ±0.1 mm | 2.1 mm ±0.1 mm | 3.1 mm ±0.1 mm |
| Bending radius | 3x cable diameter during installation; 7x cable diameter for movement; 12x cable diameter recommend at continuous movement | | |

| Design | Cable with connector type C for sensors CS005 / CS02 / CS05 / CSE05 / CS08 / CSE1 | | | | | | Cable with connector type B for sensors CS1 / CS1HP / CSE1,25 / CS2 / CSE2 / CS3 / CSE3 / CS5 / CS10 | | | | | |
|--------------|--|---------|---------|----------------------------------|------------|------------|---|---------|---------|----------------------------------|------------|------------|
| | 2 x straight connector | | | 1 x straight / 1 x 90° connector | | | 2 x straight connector | | | 1 x straight / 1 x 90° connector | | |
| Model | CCx,xC | CCmx,xC | CCgx,xC | CCx,xC/90 | CCmx,xC/90 | CCgx,xC/90 | CCx,xB | CCmx,xB | CCgx,xB | CCx,xB/90 | CCmx,xB/90 | CCgx,xB/90 |
| Standard 1 m | • | | • | • | | • | • | | • | • | | • |
| 1.4 m | | • | | | • | | | • | | | • | |
| 2 m | • | | • | • | | • | • | | • | • | | • |
| 2.8 m | | • | | | • | | | • | | | • | |
| 3 m | • | | | • | | | • | | • | • | | |
| 4 m | | | • | | | • | | | • | | | • |
| 4.2 m | | • | | | • | | | • | | | • | |
| 6 m | | | • | | | • | | | • | | | • |
| 8 m | | | • | | | • | | | • | | | • |



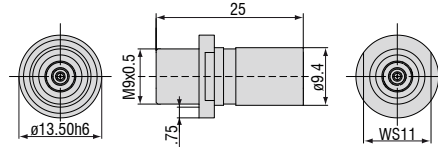
| Accessories | capa N CDT | 6110 | 6200 | 6500 |
|--|-------------------|------|------|------|
| MC2.5 Micrometer for sensor calibration, range 0 - 2.5 mm, Resolution 0.1 µm. Suitable for sensors CS005 to CS2 | | • | • | • |
| MC25D Digital micrometer for sensor calibration, range 0 - 25 mm, adjustable offset (zero). Suitable for all sensors. | | • | • | • |
| HV/B Vacuum feed through triaxial | | • | • | • |
| UHV/B Vacuum feed through triaxial for ultra-high vacuum | | • | • | • |
| PC6200-3/4 Power/trigger cable, 4 pin, 3 m | | | • | |
| SCAC3/4 Signal output cable, (necessary for multi-channel applications), 4 pin, 3 m | | | • | |
| SCAC3/5 Signal output cable, analog, 5 pin, 3 m | | • | | |
| SC6000-1,0 Synchronization cable, 5 pin, 1 m | | | • | • |
| CA5 Pre-amplifier cable 5 pin, 5 m | | | | • |
| PS2020 Power supply for DIN rail mounting; Input 230 VAC (115 VAC); Output 24 VDC / 2.5 A; L/W/H 120x120x40 mm | | • | • | |

HV/B Vacuum feed through (Art.-no. 0323050)



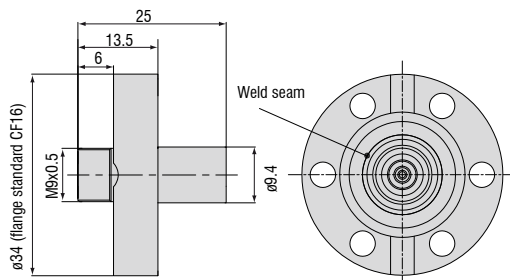
Max. leak rate 1×10^{-7} mbar · l s⁻¹, compatible with connector type B

UHV/B Vacuum feed triax weldable (Art.-no. 0323346)



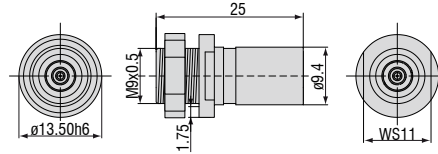
Max. leak rate 1×10^{-9} mbar · l s⁻¹, compatible with connector type B

UHV/B Vacuum feed triax with flange CF16 (Art.-no. 0323349)



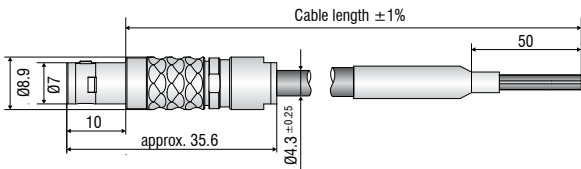
Max. leak rate 1×10^{-9} mbar · l s⁻¹, compatible with connector type B

UHV/B Vacuum feed triax screwable (Art.-no. 0323370)

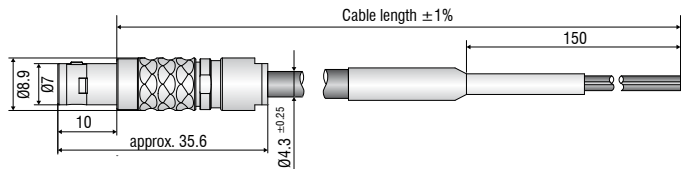


Max. leak rate 1×10^{-9} mbar · l s⁻¹, compatible with connector type B

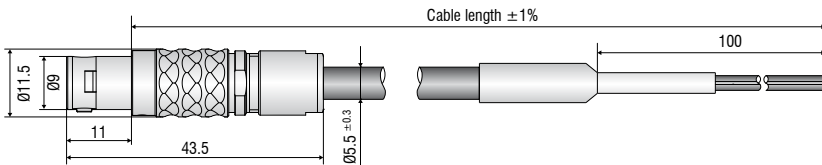
SCAC3/4 Signal output cable (Art.-no. 2902104)



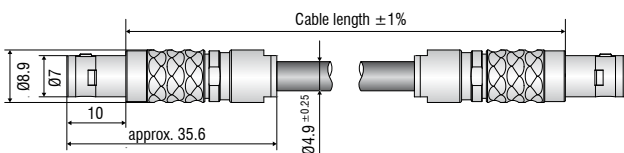
SCAC3/5 Signal output cable (Art.-no. 2902112)



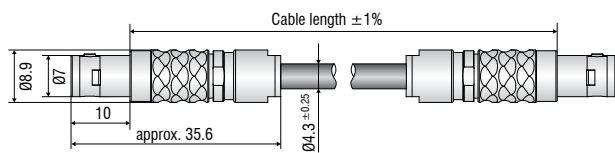
PC6200-3/4 Power-/trigger cable (Art.-no. 2901881)



SC6000-1,0 Synchronization cable (Art.-no. 2903473)



CA5 Preamplifier cable (Art.-no. 2903180)



High performance sensors made by Micro-Epsilon



Sensors and systems for displacement and position



Sensors and measurement devices for non-contact temperature measurement



2D/3D profile sensors (laser scanner)



Optical micrometers, fiber optic sensors and fiber optics



Color recognition sensors, LED analyzers and color inline spectrometer



Measurement and inspection systems