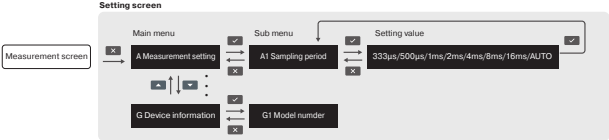


5. Menu List

Menus and operations in setting screen



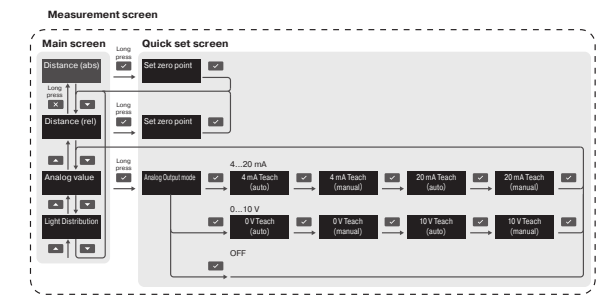
Menu List

In case "English" is selected in "E5 Language"

Initial menu	Setting value	Default value
Language	English/German/Spanish/Simplified Chinese/Japanese/Traditional Chinese/Korean	Japanese
Output Polarity	PNP/NPN/PP	NPN
Analog Output	4...20mA/0...10V/OFF	4...20mA

Main menu	Sub menu	Setting value/ Description	Default value
A	Measurement setting	A1 Sampling Period	333 µs/500 µs/1 ms/2 ms/4 ms/8 ms/16 ms/Auto
		A2 Moving Average	OFF/4/16/64/128
		A3 Median Filter	OFF/3/7/15
		A4 Measurement Direction	Positive/Negative
		A5 Measured Value Offset	-400.000 to +400.000 mm
		A6 Mask Near	CD2S-30x: -5.5 to 5.5 mm CD2S-50x: -16.5 to 16.5 mm CD2S-110x: -53.0 to 53.0 mm
		A7 Mask Far	CD2S-30x: -5.5 to 5.5 mm CD2S-50x: -16.5 to 16.5 mm CD2S-110x: -53.0 to 53.0 mm
		A8 Error Mode	Clamp value/Hold last value/Hold last value+timer
		A9 Set Clamp Value	-999.999 to +999.999 mm
		A10 Error Hold Time	1 to 9999 ms
		A11 Span Teach	The Span Teach(Auto) is calculated using the measurement value by teach for two points and the adjusted measurement value entered by the user. Setting range: -2.0 to +2.0
		A12 Peak Select	OFF/Near side/Far side
		A13 Peak Selection Threshold	0 to 4095
B	Digital Output 1 Digital Output 2**	B1 Mode	1 point/Window/FGS 1-point/Light level error/2 point/OFF
		B2 Teach 1 Auto	Save the current value as SP1
		B3 Threshold1	Near end to Far end
		B4 Teach 2 Auto**2	Save the current value as SP2
		B5 Threshold2**2	Near end to Far end
		B6 Output Mode	N.O./N.C.
		B7 Delay Timer	OFF/On delay/Off delay/On/off delay/One shot
		B8 Timer Set	1 to 10000 ms
		B9 Hysteresis	0 to 524.287 mm
		B10 Tolerance**4	0 to 524.287 mm
C	Analog	C1 Analog Output	4...20mA/0...10V/OFF**5
		C2 4mA Teach	Teach and save current measurement value as 4 mA
		C3 4mA Manual	Near end to Far end
		C4 20mA Teach	Teach and save current measurement value as 20 mA
		C5 20mA Manual	Near end to Far end

Menus and operations in Quick set



6. Specifications

Measurement specifications

Model	Cable Pigtail cable	CD2S-30	CD2S-50	CD2S-110
		CD2S-30M12	CD2S-50M12	CD2S-110M12
Center of measurement range		30 mm	50 mm	110 mm
Measurement range		±5 mm	±15 mm	±50 mm
Light source	Medium	Red semiconductor laser		
	Wavelength	655 nm		
	Maximum output	0.39 mW		
Laser class	JIS/IEC/FDA ¹	CLASS 1		
Spot size**2		0.2x0.5 mm	0.3x0.7 mm	0.5x1.6 mm
Linearity	White ceramic	±0.1% of FS	±0.1% of FS	±0.1% of FS
	Black ceramic	±0.3% of FS	±0.3% of FS	±0.3% of FS
Resolution**3		2 µm	5 µm	20 µm
Repeat accuracy**4		2 µm	5 µm	20 µm
Sampling period		333µs/500µs/1ms/2ms/4ms/8ms/16ms/Auto		
Temperature drift**5		±0.03% of FS/°C		
Weight		Approx. 60 g		

Common Specifications

Supply voltage		18 to 24 V DC (±10%, including ripple)
Current consumption		70 mA (at 24 V DC)
IO-Link	Specifications	Ver.1.1.4
	Baud rate	COM3 (230.4Kbps)
	Number of process input data bytes	6byte
	Minimum cycle time	0.8ms
Control output	No. of outputs	1 (DO1 can be switched to IO-Link.)
	Type	NPN/PNP open collector or Push-Pull (selectable by setting), max. 100 mA / 24 V DC, residual voltage 1.8 V or less
Analog output	Current	4 to 20 mA, load impedance: 300 Ω or less
	Voltage	0 to 10 V, output impedance: 100 Ω or less
External input		OFF/Threshold Teach/Analog Teach/Hold/Zero point Teach-in/Laser OFF
Display		60 x 32 dot OLED display, Menu languages: English/Germany/Spanish/Japanese/Simplified Chinese/Traditional Chinese/Korean
Indicators		Power indicator: Power on(lit green), IO-Link communication (blinking green)
		Output indicator: When control output is ON (lit orange), When error (blinking red)
Connection type		Analogue output indicator: When analogue output is ON (lit orange), Laser OFF (blinking red)
		Cable: Ø5.5 mm 2 m cable, Pigtail cable: Ø5.5 mm 300mm cable with M12 5-pin connector
Protection circuit		Minimum bending radius: Cable diameter × 2 (when fixed in place), cable diameter × 6 (when movable)
		Reverse connection protection, overcurrent protection
Environmental resistance	Degree of protection	IP67 (IEC 60529)
	Ambient temperature/humidity	-10 to +50°C/35 to 85%RH (without freezing or condensation)
	Storage temperature/humidity	-20 to +60°C/35 to 85%RH (without freezing or condensation)
	Ambient illumination	Incandescent light: 10000 lx Max. Fluorescent light: 10000 lx Max.
Applicable regulations	Vibration resistance	10 to 55 Hz Double amplitude 1.5 mm, 2 hours in each X, Y, Z direction
	Shock resistance	500m/s ³ 3 times in each X, Y, Z direction
	EMC	EMC Directive (2014/30/EU), UK EMC (Electromagnetic Compatibility Regulations 2016)
	Environment	FCC Part 15 subpart B
Safety		RoHS Directive (2011/65/EU), China RoHS (MIIT Order No. 32)
		UK RoHS (The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012), FDA Regulations (21 CFR 1040.10 and 1040.11)**6
Applicable standards		EN IEC 61000-6-2, IEC 61000-6-3, IEC 60825-1
NRTL certification		UL Listed Certification for the U.S. and Canada
Warm-up time		Approx. 10 minutes
Material		Housing: AI, Front window: PMMA

Measurement Condition

The measurement conditions are as follows unless otherwise designated:

Ambient temperature: 25°C (room temperature); supply voltage: 24 V DC; sampling period: 1 ms; moving average performed: 16; median filter: 7; center of measurement range, standard measured object (white ceramic). Furthermore, the sensor is fixed in place with an aluminum bracket when measurements are performed.

*1: In accordance with the FDA provisions of Laser Notice No. 56, the laser is classified per the IEC 60825-1:2014 standard.

*2: Defined with center strength 1/e² (13.5%) at the center of the measurement range. There may be leak light other than the specified spot size. The sensor may be affected when there is a highly reflective object close to the detection area.

*3: The smallest determinable step when changing the distance between the sensor and the target one step at a time (at moving average of 128)

*4: Peak to peak value of measurement in stationary state (at moving average of 128)

*5: Typical example when the object (white ceramic) is measured while the object and the sensor are fixed in place with aluminum brackets. This object is placed at the center of the measurement range.

*6: Excluding differences per Laser Notice No. 56.

- Support for the China RoHS directive
- For details on the support for the China RoHS (the Administrative Measure on the Control of Pollution Caused by Electronic Information Products), see the following website.
http://www.optex-fa.jp/rohs_cn/

- Specifications are subject to change without notice.
- For more information, questions and comments regarding product, please contact us at the information right.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

* This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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