



C-MOS laser displacement sensor

CD33 Series

Connectable to UQ1 control unit

Digital and RS-422 communications
High resolution specular mode for
shiny surfaces and glass measurement!

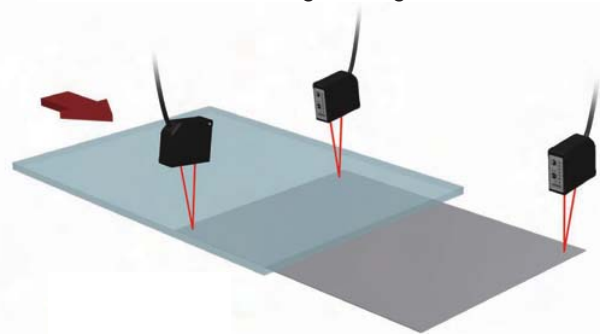
Connectable to MELSEC-Q series
through UQ1 control unit

RS422 communication type can be connected to Mitsubishi
PLC MELSEC-Q series very easily through UQ1-02 control
unit. You can get measurement result every 500us.

Specular type for measuring
reflective and transparent object

Specular type can measure transparent object like glass and
reflective object like wafer easily and stably.

- Measurement of mask height and glass thickness



Specifications

Type		Specular type		
Part Number	Cable type	CD33-L30N-422/P-422	CD33-L50N-422/P-422	CD33-L85N-422/P-422
	Connector type	CD33-L30CN-422/CP-422	CD33-L50CN-422/CP-422	CD33-L85CN-422/CP-422
Target object		Reflective object / Glass		
Stand off		26.3mm	47.3mm	82.9mm
Measurement range		±2mm	±5mm	±10mm
Full Scale		4mm	10mm	20mm
Light source		Red laser diode (wave length: 650nm, power: 390uW max.)		
Laser Class		IEC/JIS CLASS 1, FDA CLASS II		
Spot size *1		0.1*0.1mm		
Linearity		±0.2% F.S.		
Repeat Accuracy		1µm	2.5µm	5µm
Sampling speed		0.5 (default), 1, 1.5, 2ms		
Response time *2	Fast	5ms max. : 1ms (averaging : 1) + selecting sensitivity (max 4ms)		
	Standard	12.5ms max. : 8.5ms (averaging : 16) + selecting sensitivity (max 4ms)		
	High resolution	36.5ms max. : 32.5ms (averaging : 64) + selecting sensitivity (max 4ms)		

Common specifications

Control output	1 ch : Q2 (default is result of self check) NPN/PNP open collector 100mA max. / 30VDC (residual voltage max. 1.8V)	
Analog output	---	
Communication	RS-422 : 9600, 19200, 38400, 76800 bps	
Temp. drift	±0.08% / ° F.S.	
Indicators	Distance	Bar graph LED on top surface
	Output	ON : Orange (Q2)
	Input	ON : Orange (MF)
MF (Multi Function) input	Select from Laser stop, External Teach *3, Sample and hold Response time : 3ms max.	
Supply voltage	DC 12~24V (+10/-5%)	
Current consumption	max.55mA	
Connection	Cable : 2m, dia.=5mm / Connector : M12 8pin	
Protection circuit	Reverse connection protection, Over current protection	
Protection category	IP67	
Operating Temp./Humid.	-10~+45°C / 35~85%RH (No condensation or freezing)	
Ambient illuminance	Sun light : 10,000lx max. Incandescent lamp : 3,000lx max.	
Vibration resistance	10 to 55 Hz, Double amplitude 1.5mm, 2h for XYZ axis	
Shock resistance	50G (500m/s ²), XYZ axis for 3 times	
Material	Case: PBT, Front window: PMMA	
Weight	approx. 65g	

*1. Defined with center strength 1/e2(13.5%). There may be leak light other than the specified spot size. The sensor may be affected when there is a highly reflective object around the target.
 *2. Response time: response time plus selecting sensitivity time.
 *3. When "External Teach" is selected, teaching mode is specified by its ON period.

Teaching mode	ON period
1 point teach of control output Q2 : If you want to set second point of 2 point teach, please set input ON for same period in 1 minute.	470~530ms
Reverse 1 point teach of control output Q2	570~630ms
Offset (zero reset)	670~5000ms
Release offset	5000ms ~

Dimensions

