

## CSP2008 - Universal controller for up to six sensor signals

The controller CSP2008 has been designed to process 2 to 6 both optical and other sensors from Micro-Epsilon (6 digital or 4 analog input signals max., 2x internal + 4x external via EtherCAT modules from the company Beckhoff). EtherCAT is intended as external bus for connecting further sensors and I/O modules. The controller is equipped with a display offering multicolour backlighting which changes its color in the case of exceeding the limit value while a signal is displayed.

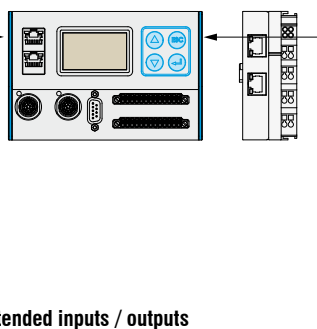
### Features

- Real-time processing of input and output signals at up to 100kHz (user selectable)
- Unique user interface for the configuration of the controller via Ethernet on a PC or laptop. All user selectable functions of the controller and the measured values can be viewed, displayed and stored in real time via your own web browser without installing any 3rd part software
- Simple sensor connection with automatic sensor recognition, configuration of the sensor using buttons and display on controller or via web browser
- Modular system upgradable with additional I/O modules for customer-specific requirements. The internal communication between I/O components using EtherCAT connection (CSP 2008 acts as master)
- Extremely flexible and powerful functionality; function modules can be combined in many ways.
- Simple mounting using DIN rail TS 35

### System setup

#### Sensors via RS422

optoNCDT 1302  
optoNCDT 1402  
optoNCDT 1700  
optoNCDT 2200/2220  
optoNCDT 2300  
optoCONTROL 2500  
optoCONTROL 2600  
confocalDT 2451/2471



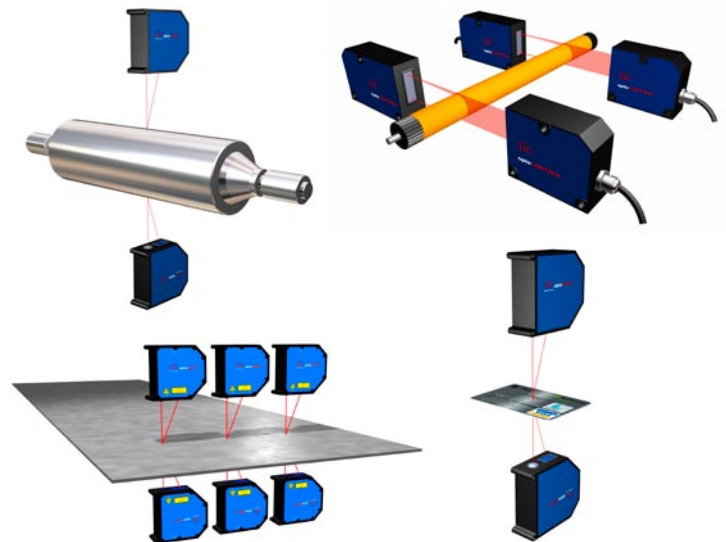
#### Beckhoff modules for extended inputs / outputs

EK1100 (EtherCat bus coupler)  
EL1002 (2x digital input 24V/3ms)  
EL1012 (2x digital input 24V/10µs)  
EL1014 (4x digital input 24V/10µs)  
EL1104 (4x digital input 24VDC/4K/24V)  
EL2002 (2x digital output 24V/0.5A)  
EL2004 (4x digital output 24VDC)  
EL3142 (2x analog input 0...20mA/16bit)  
EL3162 (2x analog input 0...10V/16bit)  
EL4024 (4x analog output 4...20mA/12bit)  
EL4102 (2x analog output 0...10V/16bit)  
EL4132 (4x analog output -10...10V/16bit)  
EL5101 (1x encoder input 5VDC RS422/16bit)  
RS422 (Extension terminal for CSP2008)  
EK1122 (2x EtherCAT switch)

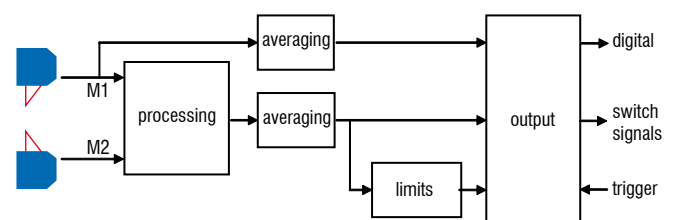


### Application fields

- Height measurement with 2 sensors
- Coplanarity measurement
- Flatness and roundness measurement with synchronised sensors
- Thickness measurement

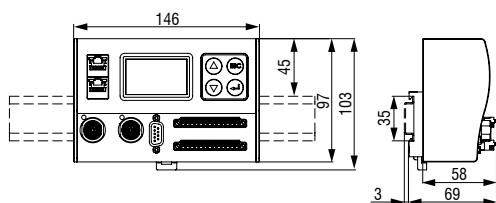


### Application example: Real Time thickness measurement with 2 optoNCDT laser sensors



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Type	Universal controller CSP2008
Measuring frequencies	0.312...100 kHz (2 sensors)
Inputs/outputs	sensors: 2 sensor connectors (16 pin)
	digital
	1x Ethernet (PC 100 MBit)
	1x EtherCAT (master, for Beckhoff I/O modules)
	1x RS422 (PLC max 1.5 Mbaud) (electrically isolated)
	2 terminal strips (13 pins)
	analog
	voltage 0...5 V, scaleable via software 0...10 V, -5...5 V, -10...10 V), electrically isolated, 100 kHz, 16 Bit
Functions	filter: moving average 1...1024 / recursive 1...32768 / median 3/5/7/9
	zero, master
	trigger (measuring value, edge, gate, software)
	limits (UL, LL, UW, LW, OK)
	calculation: A,B; A+B; A-B; -A-B; K-A-B; K+A+B; K+A-B; K+A; K+B; K(A+B); K(A+k*B)
	automatic sensor detection (digital interface)
	scaleable measuring ranges
	synchronisation
Firmware	storable configuration (max 20); bilingual (english-german)
Buttons	4 (▲; ▼; ←; ESC)
Display	Multi colour graphic display 52x30 mm; LED for successful connection controller/sensor
Power supply	9-36V, reverse polarity protection
Power supply sensors	max 2 sensors 24 VDC ±15%
EMC	DIN EN 61326-1:2006
Transient emissions	class A CISPR 11
Weight	appr 500 g
Connection	2x push-pull connectors
	2x RJ45
	1x DSUB 9 pin
	2x plugable spring terminal
Optional feature	key switch (laser on/off)
Protection class	IP 40
Operating temperature	0° C to 50°C
Storage temperature	-20°C to 70°C
Humidity	< 90%, non condensing



Universal controller with DIN rail TS 35  
(dimensions not to scale)

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