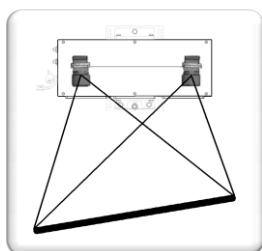




Stereoscopic Width Gauge

DigiScan

XD500



Width - Centerline - Edges Position

Built in Ethernet with Modbus TCP

Optional Industrial Network Protocol

Easy installation and maintenance

Lt 4500

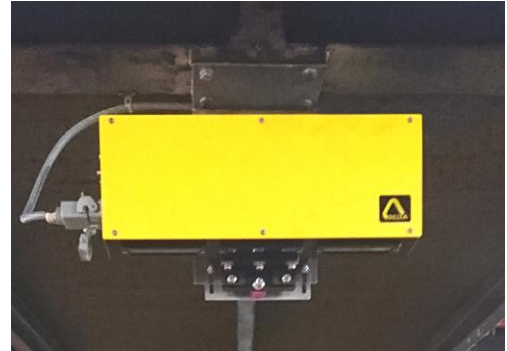


The Stereoscopic Width Gauge **DigiScan XD500**, designed for installation above the strip in cold rolling mills and processing lines, is state-of-the-art technology for measuring the width and centerline of strip or plate.

The stereoscopic arrangement permits high on-line accuracy despite material hop, tilt, lateral movement, and thickness variation.

Main features

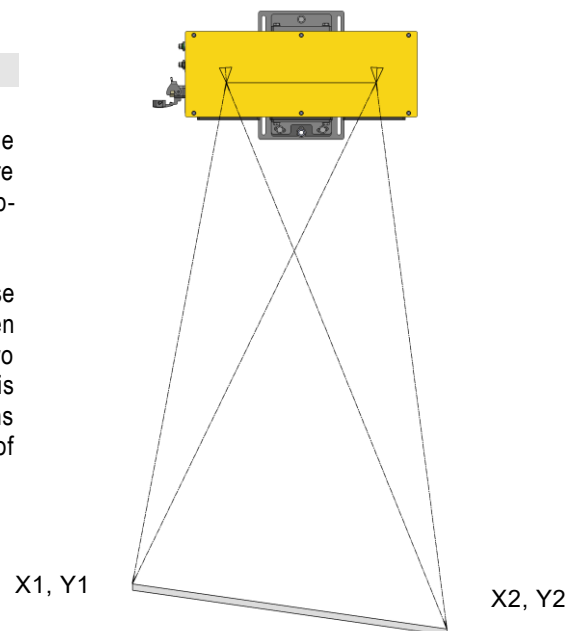
- Advanced edge detection software and data capture processor to perform edge sensing in real-time,
- Advanced stereo calibration taking into account lens distortion, with subpixel accuracy,
- On line verification and standardization to maintain high measurement accuracy,
- Setup and diagnostic of the gauge with web browser,
- Extended communication features including built in Ethernet with Modbus TCP protocol (and OPC UA in option),
- Optional industrial network protocol: Profibus DP, Profinet, EtherNet/IP
- Recording of measures, and advanced log features,
- Modular architecture allowing easy extension and implementation of effective solutions with end users,
- Simplicity of installation and maintenance,
- Very quick replacement of the gauge,
- Compact, robust, sealed aluminum housing,
- Laser line pointer for easy commissioning and verification of accuracy.



Operating principle

DELTA Stereoscopic Width Gauge employs an advanced digital edge detection process that captures the digitized camera data. Software routines running on the high-speed embedded processor perform sub-pixel edge determination in two-dimensional space.

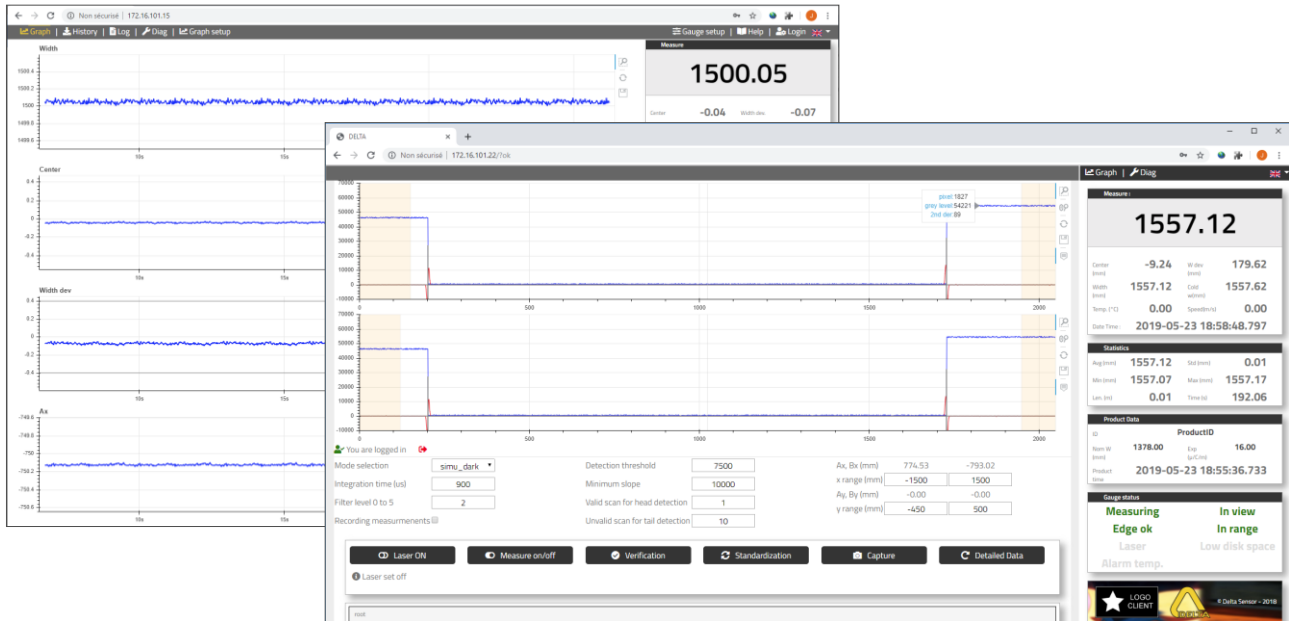
The camera data are filtered using a high-speed Infinite Impulse Response (IIR) digital filter. Sub-pixel edge locations are then determined based on the second derivative of the pixel data. With two sub-pixel edges from each camera, the true width of the material is calculated using geometric triangulation. These trigonometric functions allow very accurate width measurement in spite of the influences of material pass line variations, thickness variations and flutter.





Web server

The gauge has an integrated Web server and the connection to the gauge with any Web browser, from a PC or a tablet, gives an access to gauge measurement data and configuration parameters. Remote access is possible for diagnostic assistance.

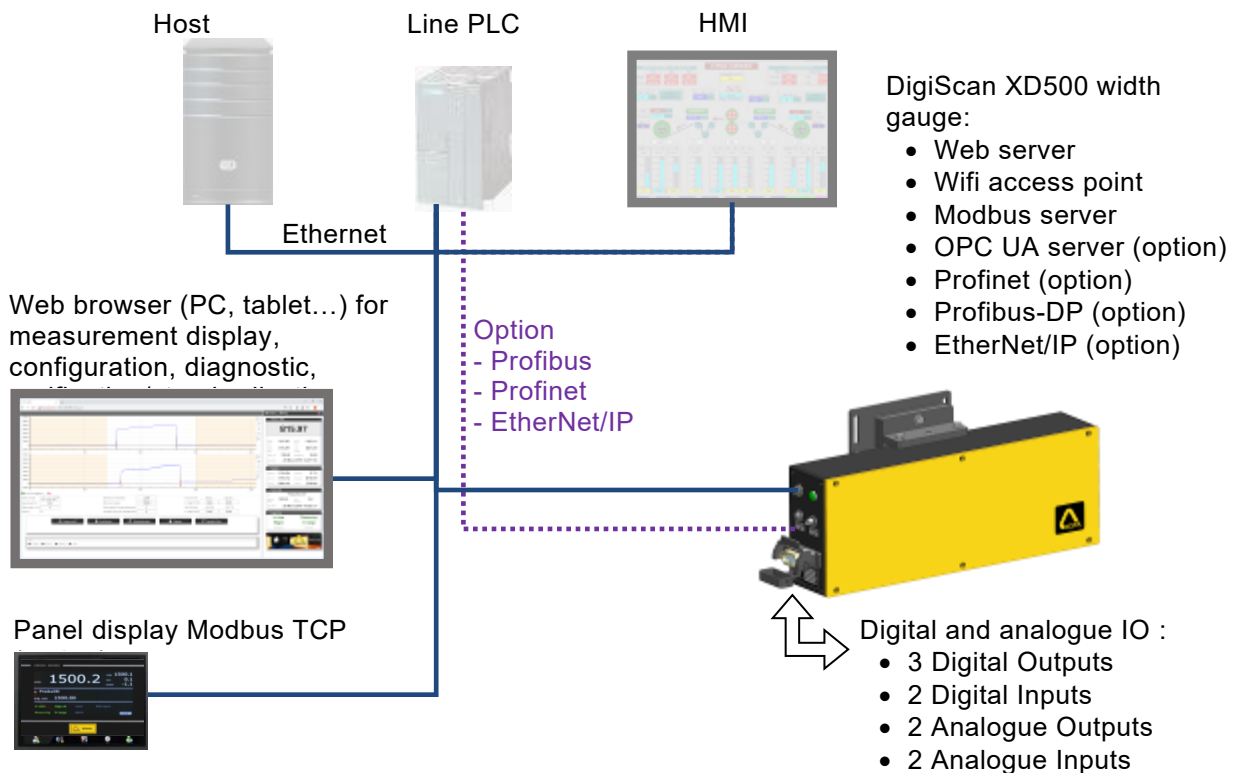


Measurement graphs and diagnostic

Connectivity

The DigiScan XD500 with built in Ethernet connection, integrated digital inputs / outputs and analogue outputs has a very flexible communication architecture and can easily be connected into any automation system.

- Integrated Modbus TCP protocol,
- Optional OPC UA protocol,
- Optional Profinet, Profibus-DP or EtherNet/IP protocol.





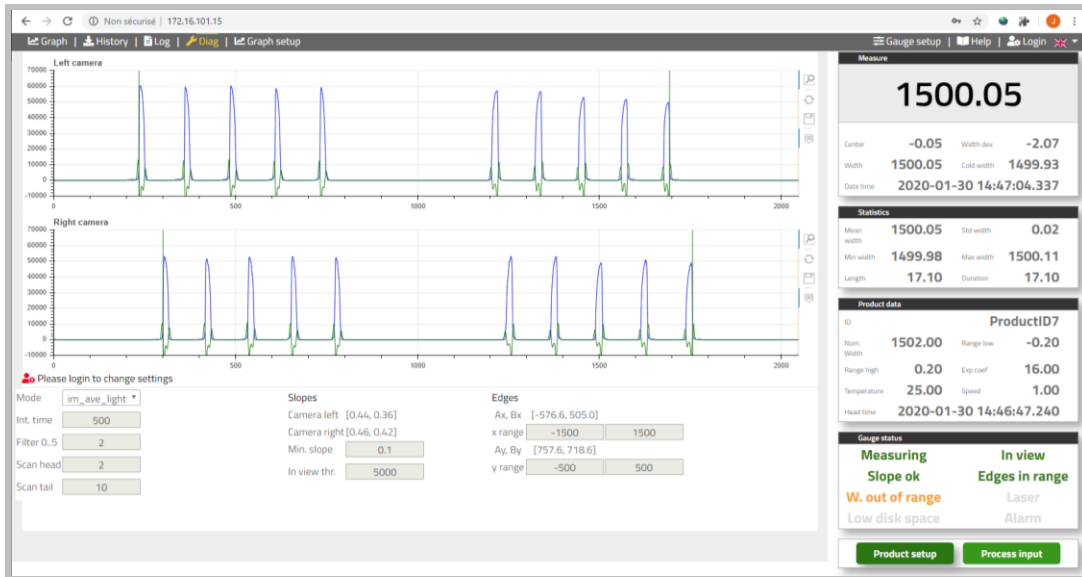
Calibration

Two-dimensional calibration is performed prior to delivery by placing a calibration fixture at several positions. Calibration is accomplished by collecting camera pixel data at these referenced positions and then the stereo optical parameters are estimated.

The width gauge is delivered calibrated in our factory. The installation's position is not critical as the stereoscopic camera will compensate for any variation in the distance between the strip and the gauge.

Verification of accuracy and standardization

The **DigiScan XD500** can be supplied with an active verification fixture, including a certified mask with 10 slots plus red LED simulating different strip widths. If the accuracy does not comply with the specification, a standardization can be made and the correction coefficients will be computed based on the measurements of the mask.



Verification of accuracy: gauge setup screen, with button to start a verification and eventually standardize the gauge. The verification is executed in a few seconds. All data are logged and can easily be retrieved from the web browser.

Gauge configuration

Model	XD5●●-SB	XD5●●-HB
Accuracy	0.025%	0.013%
Back light	To be ordered separately	
Verification/standardization	Option	Option
3 axis mounting support	Option	Option
Graphs, diagnostics with Web server	√	√
Wifi access point	√	√
OPC UA server	Option	Option
Modbus TCP server	√	√
Industrial fieldbus (Profibus, Profinet, EtherNet/IP)	Option	Option
3 digital outputs	√	√
2 digital inputs	√	√
2 analogue outputs	√	√
2 analogue inputs	√	√
Measurements history	√	√
Log, event recording	√	√

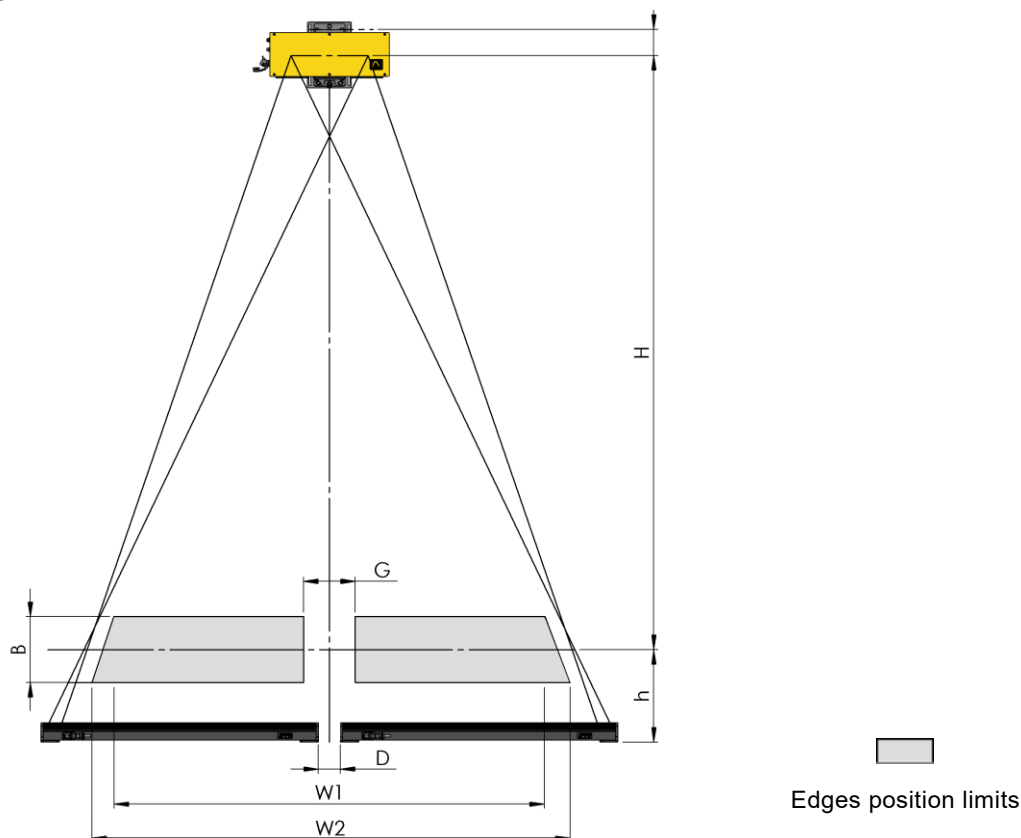
√ = included

Option = can be ordered separately



XD500 characteristics

Measuring range and performances



Model		XD52●-●B	XD53●-●B	XD54●-●B
Measurement field	W1 (mm ["])	1500 [59"]	2000 [78.7"]	2500 [98"]
	W2 (mm ["])	1700 [67"]	2200 [86.6"]	2700 [106"]
	B (mm ["])	200 [8"]	300 [12"]	
Mounting height	H (mm ["])	2050 [81"]	2700 [106"]	3000 [118"]
Accuracy XD5●●-S●	mm ["]	0.40 [0.016"]	0.50 [0.02"]	0.70 [0.028"]
Accuracy XD5●●-H●	mm ["]	0.20 [0.008"]	0.25 [0.01"]	0.35 [0.014"]

For special application: strip size, mounting height, installation constraints,... : contact us.

Back light (Dark mode)

Model Back Light		XD52●-●B 2 x EMR-C-800			XD53●-●B 2 x EMR-C-1200			XD54●-●B 2 x EMR-C-1200		
		h: distance EMR to pass line (mm)								
		200 [7.9"]	300 [11.8"]	400 [15.7"]	200 [7.9"]	300 [11.8"]	400 [15.7"]	200 [7.9"]	300 [11.8"]	400 [15.7"]
Inner gap	G (mm ["])	240 [9.5"]	340 [13.4"]	440 [17.3"]	140 [5.5"]	180 [7.1"]	250 [9.8"]	400 [15.7"]	500 [19.7"]	600 [23.6"]
Distance between back lights	D (mm ["])	120 [4.7"]	220 [8.7"]	320 [12.6"]	0 [0"]	20 [0.8"]	100 [3.9"]	300 [11.8"]	400 [15.7"]	500 [19.7"]


Protocol

Model	XD5●1-●B	XD5●2-●B	XD5●3-●B	XD5●5-●B
Build in protocol (Ethernet)	Modbus TCP			
Wifi	Wifi access point (deactivatable)			
Industrial network	-	Profibus-DP	Profinet	EtherNet/IP

Digital Inputs and Outputs

2 Digital Inputs	24 VDC - 8 mA
3 Digital outputs	Optocoupled Solid State Relay: Impedance: 50 Ω , Switching capacity: +/- 350 V peak +/- 100 mA peak
2 Analogue outputs	4 – 20 mA (500 Ω max) – Linearity 0.1% - Temperature drift : 50 ppm/°C
2 Analogue inputs	4 – 20 mA – Linearity 0.1% - Temperature drift: 50 ppm/°C

Other Data


Model	XD5●●-●B
Scan time – cycle time	2 ms – 16 ms
Operating voltage	110 V (-10%) to 240 V (+10%) - 50/60 Hz
Power consumption	50 VA
Laser line for alignment	IEC 60825-1: Class 2M
Cables	To be ordered separately. Connector fitted with silicone cable with protective steel braid. Standard length of 5 m, 8 m, 10 m and 15 m
Weight	9 kg
Protection rating	IP 66 (aluminium case)
Operating temperature	0 to 50 °C (32 to 122 °F)

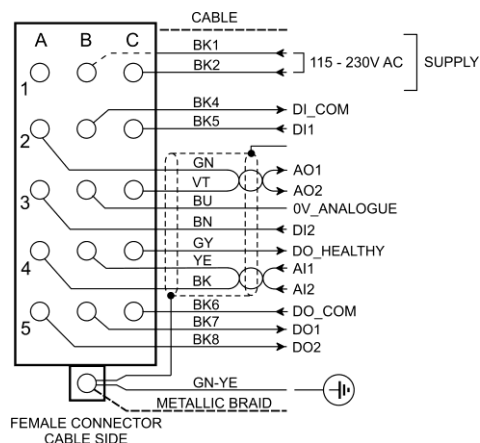
Emitter EMR-C characteristics

Emitter	EMR-C-800	EMR-C-1200
Emission	Continuous Red LED	
Emission length	800 mm	1200 mm
Emission width	30 mm	
Alarm output	Push-pull output, short circuit protection, 0/24 V - 50 mA max 0V if internal failure or internal temperature > 55°C (131 °F)	
Operating voltage	110 V (-15%) to 240 V (+10%) - 50 / 60 Hz	
Power consumption	40 VA	60 VA
Weight	8 kg	12 kg
Protection Rating	IP66	
Operating ambient T°	-20 to 55 °C (0 to 131 °F)	

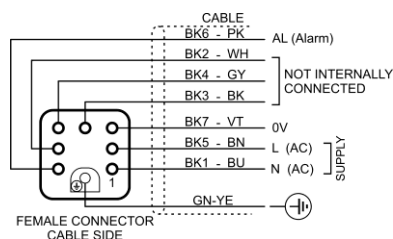


Connection

XD500

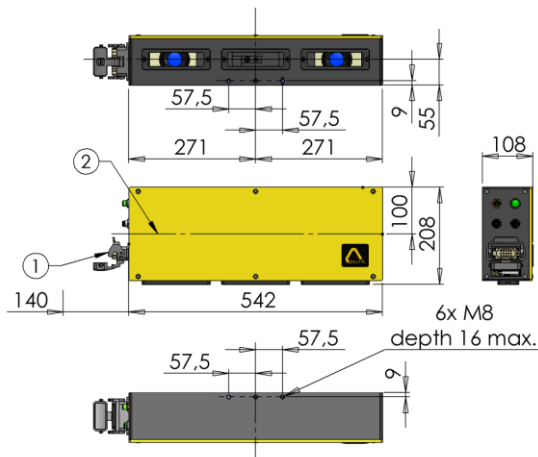


EMR-C



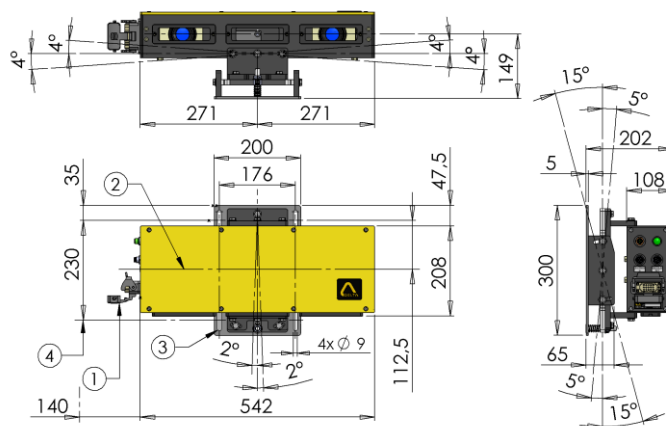
Dimensions

XD500-B



XD500-B alone

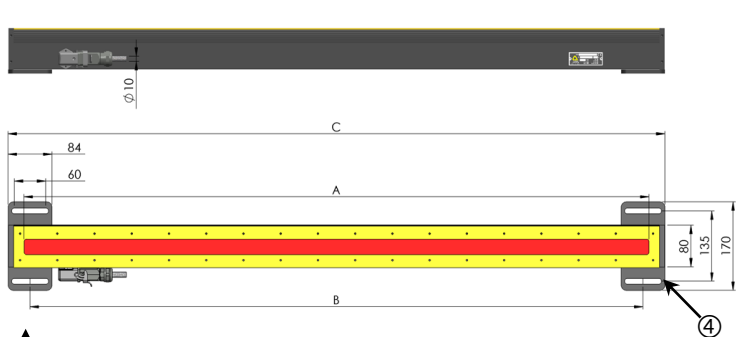
- ① Connector clearance 140 mm
- ② Reference for Stand-off distance



XD500-B with 3 axis mounting stand

- ③ 4x slots Ø 9 x 40 for mounting with screw Ø 8
- ④ Slots centre axis position

EMR-C



	A	B	C
EMR-C-800	800	775	860
EMR-C-1200	1200	1175	1260

Note: The fixing plate can be mounted in different positions (bottom / side of the emitter)



Reference for order

XD5 •• •B-• 115-230 V

EMR-C- •••• 115-230 V

Measuring range (mm)	Communication Protocol	Accuracy	Unit
2: 1500	1: Web, Modbus TCP	S: Standard	: Metric
3: 2000	2: 1 + Profibus DP	H: High accuracy	-I: Imperial
4: 2500	3: 1 + Profinet		
	5: 1 + EtherNet/IP		

Length (mm)
800
1200

Accessories and Options

- 3 axis adjustment **mounting stand** (ref: 7894240)
- **Junction box**, with Ethernet switch and 7" panel display. Dimensions: 300 x 300 x 190 mm
 - * For XD5••-•B, reference: CR500XD-B 115-230V
 - * For XD5••-•B-I: reference: CR500XD-B-I 115-230V
- Active **verification fixture**, battery powered
 - * Ref: XD-FIX1 (1555 mm), XD-FIX2 (1805 mm), XD-FIX3 (2025 mm)
 - * Ref: XD-FIX1-US (1555 mm), XD-FIX2-US (1805 mm), XD-FIX3-US (2025 mm)
- Power and I/O cable for **XD500**, with protective metallic braid:
 - * 2 connectors: 5 m (ref: 8040015), 8 m (ref: 8040030), 10 m (ref: 8040031), 15 m (ref: 8040032)
 - * 1 connector + wires: 5 m (ref: 7840277), 8 m (ref: 7840278), 10 m (ref: 7840279), 15 m (ref: 7840280)
- Power and I/O cable for **EMR**, with protective metallic braid:
 - * 2 connectors: 5 m (ref: 7440138), 8 m (ref: 7440177), 10 m (ref: 7440171), 15 m (ref: 7440140)
 - * 1 connector + wires: 5 m (ref: 7440123), 8 m (ref: 7440149), 10 m (ref: 7440150), 15 m (ref: 7440143)
- Cables for **Ethernet**, 2x Male D-coded M12 connectors, with protective metallic braid:
 - 5 m (ref: 7540277), 8 m (ref: 7540289), 10 m (ref: 7540278), 15 m (ref: 7540291)
- Cables for **Profibus-DP**, Male / Female B-coded M12 connectors, with protective metallic braid:
 - 5 m (ref: 7540290), 8 m (ref: 7540248), 10 m (ref: 7540298), 15 m (ref: 7540457)
- Profibus End of Bus Resistor (ref: 2536756)
- Panel display 7" (ref: MXP3310)
- Hood with air purging connector (on request)
- Cooling plate with 2 quick connectors for water (on request)



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