MOBA
MOBILE AUTOMATION

OEM PORTFOLIO

ALL COMPONENTS AT A GLANCE

Compact. Efficient. Robust.

EMPOWERING AUTONOMOUOS MACHINE CONTROL

CONTENT

POSITIONING SENSORS

THE BASIS FOR AUTOMATED MACHINE PROCESSES

Positioning sensors continuously detect the position, inclination and movement of machines or attachments in real time. By precisely determining position and orientation, they provide the basis for automated control systems and make a significant contribution to process reliability, efficiency and repeat accuracy.

They are used in a wide range of mobile applications - for example for the precise control of levelling systems in road construction or for the exact alignment of booms and superstructures in construction machinery. All positioning sensors from MOBA are designed for use in these harsh environments and can be flexibly integrated into OEM systems.

MSSR-620

Features

» Dual-axis slope sensor
» Simple bus lead via CAN In/Out wiring principle
» All COB-IDs correspond to the CANopen predefined connection set`

Technical data	
Operating voltage	8 … 32 V DC
Current consumption	30 mA (24 V)
Insulation voltage	3 kV
Size (LxWxH)	116 mm x 78mm x 27 mm
Weight	0.3 kg
Ingress protection	IP 67
Material	GD AlSI10Mg(Fe); EN AC-43400
Operating temperature range	-40 … +85 °C
Storage temperature range	-40 … +85 °C
Internal resolution	0.01°
Linearity	± 0.05° (25 °C)
Zero point accuracy	± 0.1° (-10 … +40 °C)

Name	Article number	Measuring range	Plugs	Interfaces
MSSR-620	04-21-20544	-30°... +30°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	CAN: CANopen CiA DS301 Baud rate: 250 Kbit/s

MAS-180

Technical data	
Voltage range	8 ... 32 V DC
Current consumption:	0,03A @ 24V
Weight:	0.3kg
Size (LxWxH)	116 mm x 78mm x 27 mm
Ingress protection:	IP 67
Storage temperature range:	-40 … +85 °C
Measuring range — frequency:	100 kHz
Resolution	0,01g
Linearity	±0,2% of final value @25°C

CAN

Name	Article number	Measuring range	Plugs	Interfaces
MAS-180	04-21-20700-A01	-18g... +18g	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	MOBA CAN, 250kB, Adr.0

MOBA IMU-6

Technical data	
Name	MOBA IMU-6
Article number	04-21-23000
Inclination measuring range	3x 360°
Inclination accuracy	Static: 0,1° Dynamic: <0,5°
Acceleration measuring range	± 4 g (8 g)
Shock-Survival	> 20g
Acceleration Resolution	min. 1 mg
Rotation rate Resolution	0,01°/s
BIAS drift	<1,0°/h
Size (LxWxH)	116 mm x 78mm x 27 mm
Temperature range	-40 - +85°C
Power requirements voltage	9 Vdc - 36 Vdc

Name	Article number	Rotation rate measuring range	Plugs	Protocoll
IMU-6	04-21-23000	-250°... +250°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	J1939, CANopen, MOBA CAN

DSM-500

Precision meets safety

» The DSM-500 ultrasonic measurement system consists of two sensors, a master and a slave
» Each of these sensors acts alternately as transmitter and receiver
» Additional safety measures result in approval according to DIN EN ISO 13849 PL d

Technical data	
Name	DSM-500 Master
Article number	04-21-10150
Voltage range	9 ... 30 V DC
Current consumptioin	< 150 mA
Ingress protection rating	IP 67
Measuring range	0.05 ... 5 m
Operating temperature range	-20°...+70°C
Storage temperature range	-40°...+80°C
Resolution	5 mm
Size (LxWxH)	99 mm x 71 mm x 68 mm
Output signal	2x CANopen

Name	Article number	Connectors	Remark
DSM-500 Slave	04-21-10160	1x M12 5-pin 1x M12 8-pin	System consists of master and slave.
DSM-500 Slave	04-21-10170	1x M12 8-pin	System consists of master and slave.

MRW 500

Features

» Moment compensated redundant load cell 4-20 mA at 0-500 kg
» Load cell meets the requirements of norms EN2809 and EN13849-1 PL d
» Cable: 5m, open end

Technical data	
Operating voltage	8.5...32 V DC
Weight	4.6 kg
Size	176 x 130 x 80 mm
Ingress protection	IP 67
Material	AlZnMgCu1.5, F53
Max. nominal load	500 kg
Deflection at nominal load	< 0.3 mm
Max. overload, electrical system	50 % (risk of electrical damage above this value)
Max. overload, mechanical system	100 % (risk of mechanical damage above this value)
Max. break-proof overload	200 % (risk of demolition above this value)
Operating temperature range	-30°...+70°C
Storage temperatur range	-40°...+80°C
Burden resistance	< 500 Ω per channel
Zero point drift	< 0.5 % of rated value
	± 0.01 %/°C of rated capacity
Combined error	± 0.03 % of rated output
Connection cable	1 x 5 m, 8 x 0.22 mm² (open)

Name	Article number	Mounting method	Insulation voltage	Insulation resistance	Analog outputs
MRW 500 4-20 mA insulated	04-04-00515	4 tapped holes M16 x 1.5 x 30 mm on each side	1 kV AC (sinus) 3 kV DC (ramp < 1 kV/s; t < 1 min)	> 2000 MOhm	2x 4 ... 20 mA corresponding to 0 ... 500 kg
MRW 500 4-20 mA not insulated	04-04-00516	4 tapped holes M16 x 1.5 x 30 mm on each side	–	–	2x 4 ... 20 mA corresponding to 0 ... 500 kg

MRW 1000 4-20 MA

Features

» Moment compensated redundant load cell 4-20 mA at 0-1000 kg
» Load cell meets the requirements of norms EN280 and EN13849-1 PL d
» Cable: 5m, open end

Technical data	
Operating voltage	8,5...32 V DC
Weight	4.6 kg
Size	176 x 130 x 80 mm
Ingress protection	IP 67
Material	AlZnMgCu1.5, F53
Rated capacity	1000 kg
Deflection at nominal load	< 0.3 mm
Electrical load saving	150 % of rated capacity
Mechanical load saving	200 % of rated capacity
Mechanical overload	300 % of rated capacity
Operating temperature range	-30°...+70°C
Storage temperatur range	-40°...+80°C
Burden resistance	< 500 Ω per channel
Long term zero drift	< 0.5 % of rated value
Combined error	± 0.03 % of rated output
Connection cable	1 x 5 m, 8 x 0.22 mm² (open)

Name	Article number	Mounting method	Insulation voltage	Insulation resistance	Analog outputs
MRW 1000 4-20 mA insulated	04-04-00510	4 tapped holes M16 x 1.5 x 30 mm on each side	1 kV AC (sinus) 3 kV DC (ramp < 1 kV/s; t < 1 min)	> 2000 MOhm	2x 4 ... 20 mA corresponding to 0 ... 1000 kg
MRW 1000 4-20 mA not insulated	04-04-00511	4 tapped holes M16 x 1.5 x 30 mm on each side	–	–	2x 4 ... 20 mA corresponding to 0 ... 1000 kg

MRW CAN

Features

» Compensated of the influence of the lever arm
» Compensation of the temperature behaviour

Technical data	
Operating voltage	8,5...32 V DC
Weight	4.6 kg
Size	176 x 130 x 80 mm
Ingress protection	IP 67
Material	Aluminium
Rated capacity	1000 kg
Deflection at nominal load	< 0.3 mm
Electrical load saving	150 % of rated capacity
Mechanical load saving	250 % of rated capacity
Mechanical overload	200 % of rated capacity
Operating temperature range	-30°...+70°C
Storage temperatur range	-40°...+80°C
Connection cable	1 x 5 m, 8 x 0.22 mm² (open)

CANopen

Name	Article number	Mounting method	Insulation voltage	Insulation resistance	Outputs
MRW CAN insulated	04-04-00590	4 tapped holes M16 x 1.5 x 30 mm on each side	1 kV AC (sinus) 3 kV DC (ramp < 1 kV/s; t < 1 min)	> 2000 MOhm	2x CAN
MRW CAN not insulated	04-04-00595	4 tapped holes M16 x 1.5 x 30 mm on each side	–	–	2x CAN

MRW-XL 4-20 MA

Features

» Moment compensated redundant load cell
» For bigger aerial work platforms
» 4-20 mA at 0-1000 kg
» Load cell meets the requirements of norms EN280 and EN13849-1 PL d
» Additional variations of request
» Cable: 5m, open end

Technical data	
Operating voltage	8,5...32 V DC
Weight	7.5 kg
Size	196 x 102 x 116 mm
Ingress protection	IP 67
Material	AlZnMgCu1.5, F53
Rated capacity	1000 kg
Deflection at nominal load	< 0.3 mm
Electrical load saving	150 % of rated capacity
Mechanical load saving	200 % of rated capacity
Mechanical overload	300 % of rated capacity
Operating temperature range	-30°...+70°C
Storage temperatur range	-40°...+80°C
Long term zero drift	< 0.5 % of rated value
Combined error	± 0.03 % of rated output
Connection cable	1 x 5 m, 8 x 0.22 mm² (open)

Name	Article number	Mounting method	Insulation voltage	Insulation resistance	Analog outputs
MRW 1000 4-20 mA insulated	04-04-01510	4 tapped holes M20 x 2.5 x 45 mm on each side	1 kV AC (sinus) 3 kV DC (ramp < 1 kV/s; t < 1 min)	> 2000 MOhm	2x 4 ... 20 mA corresponding to 0 ... 1000 kg
MRW 1000 4-20 mA not insulated	04-04-01511	4 tapped holes M20 x 2.5 x 45 mm on each side	–	–	2x 4 ... 20 mA corresponding to 0 ... 1000 kg

INCLINATION SENSORS

PRECISE ANGLE MEASUREMENT FOR SAFE MACHINE OPERATION

Inclination sensors measure static inclination angles absolutely in relation to the centre of the earth. They are used wherever the exact alignment of machines and components is crucial for safety or functionality: for stabilising cranes and mobile working platforms, but also for precise levelling in road construction.

The inclination sensors from MOBA impress with maximum measuring accuracy and have been specially developed for use in harsh environments: shock-resistant, temperature-resistant and stable over the long term, even in outdoor use.

MSS TYPE 3 SERIES

Features

» 2-axis, ± 60°
» CAN interface
» Compact, flat design
» Connector: 2x 5pole (CAN IN/OUT)
» Zero adjustment via infrared interface

Technical data	
Voltage range	8...32 V DC
Current consumption	0.03 A @ 24 V
Axis	2
Zero point accuracy (25°C)	± 0.1°
Zero point accuracy (-40...+85°C) typical drift	± 0.0075°/K
Zero point accuracy (-40...+85°C) max. drift	± 0.02°/K
Linearity (25° C)	± 0.05°
Resolution	0.02°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	X-/Y-axis measuring range	Plugs	Interfaces
MSS-322	04-21-20430	-60°... +60°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA DS 301

MSS TYPE 5 SERIES

Features

» 1-axis, ± 15°, redundant safety switch
» Operates with two completely independent channels
» CAN interface
» Compact, flat design
» Zero adjustment via infrared interface

Technical data	
Voltage range	8...32 V DC
Measuring range	-15°...+15°
Axis	1
Zero point accuracy (25°C)	± 0.1°
Zero point accuracy (-40...+85°C) typical drift	± 0.0075°/K
Zero point accuracy (-40...+85°C) max. drift	± 0.02°/K
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg
Plugs	5 pin binder M12, male (CAN), 5 pin binder M12, female

Name	Article number	Current consumption	Measuring range	Resolution	Linearity (25° C)	Interfaces
MSS-505	04-30-00250	0.07 A @ 13.8 V	-45°...+45°	0.05°	± 0.01°	Safety switch (S1/S2) closed ≥ 8.5°, indicator switch (K1/K2) K1closed ≥ +3.0° K2 closed ≤ -3.0°
MSS-515	04-21-20420	0.05 A @ 24 V	-30°...+30°	0.02°	± 0.05°	Safety switch (S1/S2) closed ≤ 8.5°, CANopen communication in compliance with spec. CIA DS 301
MSS-517	04-21-20422	0.05 A @ 24 V	-30°...+30°	0.02°	± 0.05°	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA DS 301

MSS TYPE 5 SERIES

Features

» 2-axis, redundant
» Operates with two independent channels
» CAN interface
» Compact, flat design
» Zero adjustment via infrared interface
» TÜV proofed

Technical data	
Voltage range	8...32 V DC
Current consumption	0.05 A @ 24 V
Axis	2
Zero point accuracy (25°C)	± 0.1°
Zero point accuracy (-40...+85°C) typical drift	± 0.0075°/K
Zero point accuracy (-40...+85°C) max. drift	± 0.02°/K
Linearity (25° C)	± 0.05°
Resolution	0.02°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	Measuring range	Plugs	Interfaces
MSS-520	04-21-20440	-30°...+30°	5 pin binder M12, male (CAN), 5 pin binder M12, female	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA DS 301
MSS-521	04-21-20441	-30°...+30°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Separate CAN Bus wiring of each channel, CANopen communication in compliance with spec. CIA DS 301

MSS TYPE 5 SERIES

Features

» 1-axis, ± 180°, redundant
» Operates with two completely independent channels
» CAN interface
» Compact, flat design
» Zero adjustment via infrared interface

Technical data	
Voltage range	8...32 V DC
Current consumption	0.05 A @ 24 V
Axis	1
Zero point accuracy (25°C)	± 0.1° (cross slope < 5°)
Zero point accuracy (-40...+85°C) typical drift	± 0.1°/K
Zero point accuracy (-40...+85°C) max. drift	± 0.03°/K
Linearity (25° C)	± 0.2°
Resolution	0.02°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	Measuring range	Plugs	Interfaces
MSS-530	04-21-20450	-180°...+180°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA DS 301
MSS-531	04-21-20451	-180°...+180°	5 pin binder M12, male (CAN 1), 5 pin binder M12, male (CAN 2)	Separate CAN Bus wiring of each channel, CANopen communication in compliance with spec. CIA DS 301

MSS TYPE 7 SERIES

Features

» 2-axis, ± 30°, redundant
» Temperature compensated
» Operates with two independent channels
» CAN interface
» Compact, flat design
» Zero adjustment via infrared interface

Technical data	
Voltage range	8...32 V DC
Current consumption	0.05 A @ 24 V
Axis	2
Zero point accuracy (25°C)	± 0.1°
Zero point accuracy (-40...+85°C) typical drift	± 0.002°/K
Zero point accuracy (-40...+85°C) max. drift	± 0.004°/K
Linearity (25° C)	± 0.05°
Resolution	0.02°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	Measuring range	Plugs	Interfaces
MSS-720	04-21-20442	-30°...+30°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA DS 301
MSS-721	04-21-20443	-30°...+30°	5 pin binder M12, male (CAN 1), 5 pin binder M12, male (CAN 2)	Separate CAN Bus wiring of each channel, CANopen communication in compliance with spec. CIA DS 301

MSS TYPE 7 SERIES

Features

» 1-axis, ± 180°, redundant
» Operates with two independent channels
» CAN interface
» Compact, flat design
» Zero adjustment via infrared interface

Technical data	
Voltage range	8...32 V DC
Current consumption	0.05 A @ 24 V
Axis	1
Zero point accuracy (25°C)	± 0.1° (cross slope < 5°)
Zero point accuracy (-40...+85°C) typical drift	± 0.003°/K
Zero point accuracy (-40...+85°C) max. drift	± 0.006°/K
Linearity (25° C)	± 0.2°
Resolution	0.02°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	Measuring range	Plugs	Interfaces
MSS-730	04-21-20452	-180°...+180°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA DS 301
MSS-731	04-21-20453	-180°...+180°	5 pin binder M12, male (CAN 1), 5 pin binder M12, male (CAN 2)	Separate CAN Bus wiring of each channel, CANopen communication in compliance with spec. CIA DS 301

MSS HYBRID TYPE 6 SERIES

Features

» 2-axis, ± 30°
» Temperature compensated
» CAN interface
» Compact, flat design

Technical data	
Voltage range	8...32 V DC
Current consumption	0.03 A @ 24 V
Axis	2
Zero point accuracy (25°C)	± 0.1°
Offset drift, typ	± 0.002°/K
Offset drift, max	± 0.004°/K
Sensitivity error, max	± 0.5 % of reading
Cross axis error, max	± 0.5 % of reading
Resolution	0.1°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	X-/Y-axis measuring range	Plugs	Interfaces
MSSH-620	04-21-22000	-30°... +30°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA 301

MSS HYBRID TYPE 6 SERIES

Features

» 1-axis, ± 180°
» Temperature compensated
» Compact, flat design

Technical data	
Voltage range	8...32 V DC
Current consumption	0.03 A @ 24 V
Axis	2
Offset drift, typ	± 0.003°/K
Offset drift, max	± 0.006°/K
Nonlinearity, typ	± 0.2
Nonlinearity, max	± 0.5
Resolution	0.1°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	X-axis measuring range	Plugs	Interfaces
MSSH-630	04-21-22025	-180°... +180°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA 301

MSS HYBRID TYPE 7 SERIES

Features

» 1-axis, ± 180°, redundant
» Operates with two independent channels
» CAN interface
» Compact, flat design

Technical data	
Voltage range	8...32 V DC
Current consumption	0.05 A @ 24 V
Axis	2
Zero point accuracy (25°C)	± 0.1°
Offset drift, typ	± 0.002°/K
Offset drift, max	± 0.004°/K
Sensitivity error, max	± 0.5 % of reading
Cross axis error, max	± 0.5 % of reading
Resolution	0.1°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	X-/Y-axis measuring range	Plugs	Interfaces
MSSH-720	04-21-22050	-30°...+30°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA 301
MSSH-721	04-21-22075	-30°...+30°	5 pin binder M12, male (CAN 1), 5 pin binder M12, male (CAN 2)	Separate CAN Bus wiring of each channel, CANopen communication in compliance with spec. CIA 301

MSS HYBRID TYPE 7 SERIES

Features

» 1-axis, ± 180°, redundant
» Temperature compensated
» Operates with two independent (and redundant) channels
» CAN interface
» Compact, flat design

Technical data	
Voltage range	8...32 V DC
Current consumption	0.05 A @ 24 V
Axis	2
Zero point accuracy (25°C)	± 0.1°
Offset drift, typ	± 0.003°/K
Offset drift, max	± 0.006°/K
Nonlinearity, typ	± 0.2°
Nonlinearity, max	± 0.5°
Resolution	0.1°
Cut-off frequency	0.9 Hz
Ingress protection rating	IP 67
Insulation voltage	3 kV DC
Operating temperature range	-40°...+85°C
Storage temperatur range	-40°...+85°C
Size (LxWxH)	70 mm x 80 mm x 35 mm
Weight	0.2 kg

Name	Article number	X-axis measuring range	Plugs	Interfaces
MSSH-730	04-21-22100	-180°...+180°	5 pin binder M12, male (CAN IN), 5 pin binder M12, female (CAN OUT)	Simple bus lead via CAN IN/OUT wiring principle, CANopen communication in compliance with spec. CIA 301
MSSH-731	04-21-22125	-180°...+180°	5 pin binder M12, male (CAN 1), 5 pin binder M12, male (CAN 2)	Separate CAN Bus wiring of each channel, CANopen communication in compliance with spec. CIA 301

G-SLOPE

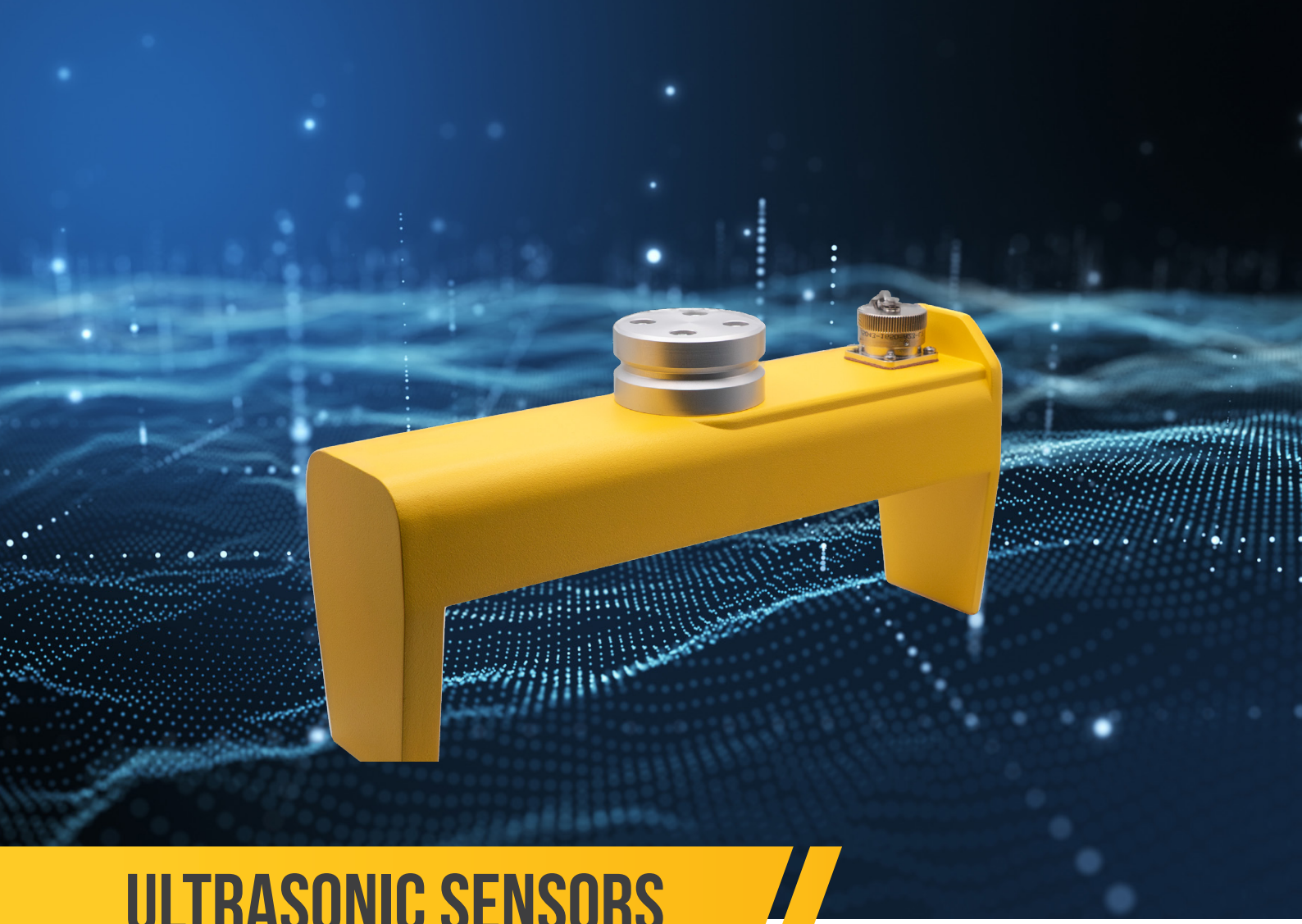
Features

» Forced balance inclinometer
» Shock resistant, direct mount, rugged unit
» Extremely sensitive high accuracy measurement
» Virtual infinite resolution
» Compensation of lateral acceleration
» Increased inclination stability
» Faster response

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption:	≤ 50 mA
Weight:	1.9 kg
Size (LxWxH)	250 mm x 100 mm x 80 mm
Ingress protection:	IP 67
Operating temperature range:	-25 … +85 °C
Storage temperature range:	-25 … +85 °C
Shock resistance:	15 g, 15 ms (DIN EN 60068-2-29)
Internal resolution:	0,01 % = 1 digit
Zero point stability:	0,1 %

CAN

Name	Article number	Measuring range	Plugs	Interfaces
G-Slope	04-21-21020	-15°... +15°	7-pin plug (Bayonet connection)	1x ISO 11898, 24 V, 125 kBit/s



ULTRASONIC SENSORS

PRECISION AT A DISTANCE, EVEN UNDER THE TOUGHEST CONDITIONS

Ultrasonic sensors measure distances and object positions using high-frequency sound waves - contactless, reliable and independent of light conditions or surface properties. An emitted pulse hits the target object and provides exact distance data in real time via the reflected echo.

Compared to optical systems, ultrasonic sensors remain fully operational even in dusty, dirty, wet or dark conditions - making them ideal for robust outdoor use. Whether in height control during asphalt paving, distance measurement on mobile machines or the positioning of attachments: they deliver precise measurement results.

SONIC-SKI PLUS

Features

» Non contacting distance measurement
» Designed for rough conditions
» Sensoric entirely sealed
» Increased measuring range, improved accuracy by powerfull main beam
» Noise reduction by elimination of side beams
» Accurate reference measure for constant correction of temperature influence
» Additional functions in ground and string line sensing

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption:	300 mA
Weight:	2.1 kg
Ingress protection:	IP 67
Operating temperature range:	-25 … +85 °C
Storage temperature range:	-40 … +85 °C
Measuring range ground sensing:	200 … 1500 mm
Measuring range string line sensing.	200 … 1000 mm
Ultrasonic frequency:	120 kHz
Ultrasonic beam width:	14°
Linearity error:	0.5 % (of full scale)
Temperature deviation:	± 1 % (of reading)
Repeatability:	± 1 mm

CAN

Name	Article number	Measuring range best results	Plugs	Interfaces
Sonic-Ski plus	04-21-10120	250 … 400 mm	7-pin plug (Bayonet connection)	1x ISO 11898, 24 V, 125 kBit/s

SUPER-SKI

Features

» Non contacting distance measurement
» Sensoric entirely sealed
» Increased measuring range, improved accuracy by powerfull main beam
» Accurate reference measure for constant correction of temperature influence
» Quick and easy installation (1 person)
» Barrier-free
» Single Super-Ski sensing
» Visualization of the work status
» Connectable to MM-II (Software-Version A04 or higher)
» Designed for rough conditions

Technical data	
Operating voltage:	8 … 32 V DC
Power consumption:	max. 8.5 W
Weight:	9.8 kg
Ingress protection:	IP 67
Operating temperature range:	-25 … +85 °C
Storage temperature range:	-40 … +85 °C
Ultrasonic frequency:	120 kHz
Ultrasonic beam width:	± 7°
Linearity error:	0.5 % (of full scale)
Temperature deviation:	± 1 % (of reading)
Repeatability:	± 1 mm

CAN

Name	Article number	Measuring range	Plugs	Interfaces
Super-Ski	04-21-10200	200 … 1400 mm	6-pin plug (Magnetic connection) 7-pin plug (Bayonet connection)	CAN: 1 x ISO 11898-2, 24 V Baud rate: 125 kBit/s (3) / 250 kBit/s (adjustable)

WIRE ROPE SENSOR

Features

» Designed for rough conditions
» High-precision
» Easy maintenance by user
» Best sensor to determine the height of the side plate

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption:	100 mA
Weight:	1.3 kg
Ingress protection:	IP 67
Operating temperature range:	-25 … +70 °C
Storage temperature range:	-40 … +80 °C
Resolution	0.1 mm
Repeatability:	± 0,25 mm
Linearity error:	± 0,1 % (full-scale reading)

CAN

Name	Article number	Measuring range	Plugs	Interfaces
ROPS-0900	04-21-30070	0 … 900 mm	7-pin plug, left (Bayonet connection)	CAN: 1x ISO 11898, 24 V, 125 kBit/s,

CSMT-300

Features

» Non contacting distance measurement
» Designed for rough conditions
» Sensoric entirely sealed
» Large measuring range, improved accuracy by powerfull main beam
» Noise reduction by elimination of side beams
» Accurate reference measure for constant correction of temperature influence

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption:	≤ 100 mA
Weight:	1.2 kg
Ingress protection:	IP 67
Operating temperature range:	-25 … +85 °C
Storage temperature range:	-40 … +85 °C
Ultrasonic frequency:	120 kHz
Ultrasonic beam width:	14°
Linearity error:	0.5 % (of full scale)
Temperature deviation:	± 1 % (of reading)
Repeatability:	± 1 mm

CAN

Name	Article number	Measuring range	Plugs	Interfaces
CSMT-300	04-21-10060	150 … 600 mm	7-pin plug (Bayonet connection)	1x ISO 11898, 24 V, 125 kBit/s

CSMS-1000

Features

» Non contacting distance measurement
» Designed for rough conditions
» Sensoric entirely sealed
» Large measuring range, improved accuracy by powerfull main beam
» Noise reduction by elimination of side beams
» Accurate reference measure for constant correction of temperature influence

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption:	≤ 100 mA
Weight:	1.2 kg
Ingress protection:	IP 67
Operating temperature range:	-25 … +85 °C
Storage temperature range:	-40 … +85 °C
Ultrasonic frequency:	120 kHz
Ultrasonic beam width:	14°
Linearity error:	0.5 % (of full scale)
Temperature deviation:	± 1 % (of reading)
Repeatability:	± 1 mm

CAN

Name	Article number	Measuring range	Plugs	Interfaces
CSMS-1000	04-21-10050	150 … 1200 mm	7-pin plug (Bayonet connection)	1x ISO 11898, 24 V, 125 kBit/s

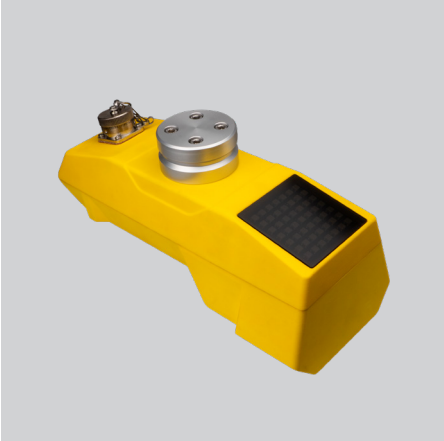
OPTICAL SENSORS

RELIABLE DETECTION USING LIGHT

Optical sensors operate with light – typically in the visible or infrared spectrum – and detect the presence, position, movement, or surface characteristics of objects without contact. They emit targeted light pulses and analyse the reflected signals to obtain

precise information about the target object - quickly, without contact and with high resolution. Depending on the functional principle (e.g. reflection, transmitted light or triangulation method), they can measure distances, recognise surfaces or precisely track movements. This makes optical sensors ideal for applications in which detailed object detection is required.

EDGE-TRACKER



Features

» Non contacting edge detection and tracking – proven for all typical edges in road construction
» Integrated visualisation
» Ground illumination selectable

Technical data	
Operating voltage:	9 ... 30 V DC
Nominal voltage:	12 V / 24 V
Reverse polarity protection:	yes
Current consumption:	max. 400 mA (24 V)
Mounting method:	locating pivot (MOBA mounting system)
Weight:	3.6 kg
Ingress protection, electronic:	IP 67
Ingress protection, housing:	IP 55
Operating temperature range:	-25 °C ... +50 °C
Storage temperature range:	- 40 °C ... +70 °C
Laser class:	1
Field of view (FoV):	100°
Ground distance (mounting height):	0.6 ... 5.0 m
Max. mounting angle:	50° (FoV/2)
Min. edge height:	20 mm
Accuracy edge position	± 2 mm
Accuracy edge height	± 2 mm
Accuracy height to edge	± 2 mm
Accuracy height to ground	± 2 mm

CANopen

Name	Article number	Wavelength	Plugs	Interfaces
METL-100	04-21-61100	905 mm	7-pin plug (Bayonet connection) Address logic	CAN: ISO 11898-2; CANopen CIA 301 Bitrate: 250 kBit/s (default) Node ID: 84

MTPA-300

Features

» Fast scan line measurements
» Results in seamless thermal profile
» Lightweight sensor
» Scratch protected lenses
» Scan width up to 13 m possible
» Flexible width adjustment
» High precision, calibrated sensor
» Automatic edge detection
» Easy mounting

Technical data	
Operating voltage:	9 … 32 V DC
Current consumption	max. 100 mA
Weight:	1.1 kg
Ingress protection:	IP 67
Operating temperature range:	-10 °C … +70 °C
Storage temperature range:	-20 °C … +80 °C
Accuracy	± 2 % or ± 2 K
Measuring resolution	0.1 K
Repeatability	± 0.5 % or ± 0.5 K
Field of view (FoV):	120°
Measuring frequency:	4 Hz
Measuring points	1 ... 130
Measuring point size	10 x 10 cm
Measuring distance:	1.5 ... 5 m
Emission factor:	0.95
Spectral range:	8 ... 14 µm

CANopen

Name	Article number	Temperature measuring range	Plugs	Interfaces
MTPA-300	04-21-60010	0 ... 280 °C	10 pin male plug, bayonet connection Address logic	CAN: ISO 11898-2, CANopen CIA 301 Bitrate: 250 kBit /s Node ID: 88

LINE-READER

Features

» Front glass hardened and anti-reflective
» Scratch and impact resistant
» Adapter cable with additional strain relief
» Connectable to MM-II (Software-Version A04 or higher)

Technical data	
Operating voltage:	9 … 32 V DC
Power consumption:	< 13 W
Mounting method:	3 x M5
Weight:	0.6 kg
Size (LxWxH)	105 mm x 85 mm x 56 mm
Material:	Aluminium
Ingress protection:	IP68, IP69K
Operating temperature range:	-40 °C … +85 °C
Storage temperature range:	-40 °C … +85 °C
Image sensor:	CMOS 1/2.7“ / HDR
Image sensor resolution:	1920 x 1080 px (full HD)
Image format:	16:9
Viewing angle:	45°
Illumination:	LED, white light

CAN

Name	Article number	Wavelength	Plugs	Interfaces
MLRC-450	04-21-61050	905 mm	8 pin male plug, threaded connection, 4 pin female plug, threaded connection, 7 pin male plug, bayonet connection	Interface 1: 1 x CAN ISO 11898 – 24 V; 125 kBit/s Connector type: 1 x M12, A coded, 8 pin Interface 2: Ethernet 100Base-TX (3) Connector type: 1 x M12, D coded, 4 pin

LS-2000

Features

» Compatible with all common rotating laser transmitters for machine control
» Combined linear an non linear detection of laser beam
» Intigrated LED indicator for positioning and control
» Dynamic adjustment of sensitivity
» Cutoff frequency low pass filter 2.5 Hz (reduced detection of reflections)

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption	400 mA (12 V)
	205 mA (24 V)
Weight:	1.8 kg
Ingress protection:	IP 67
Operating temperature range:	-40 … +70 °C
Storage temperature range:	-40 … +70 °C
Working diameter:	up to 600 m (depending on transmitter)
Receiving angle:	360°
Receiving range:	220 mm
Resolution:	0.1 mm
Wavelength:	600 < λ < 1030 nm (sensivity > 30 %)
Max. sensivity:	λ 850 nm
Rotation frequency:	10 Hz … 20 Hz ±10%

CAN

Name	Article number	Measuring range	Plugs	Interfaces
LS-2000	04-60-11370	205 mm	7-pin male connector screw type connection	CAN: 1x ISO 11898, 24 V bitrate CAN, factory set A01: 125 kBit/s (adjustable) bitrate CAN, factory set B01: 250 kBit/s (adjustable)

LS-3000

Features

» Compatible with all common rotating laser transmitter for machine control
» Linear detection of the laser beam
» No electric mast for height adjustment required
» Individual set point selection by key touch
» Intigrated LED indicator for positioning and control
» Dynamic adjustment of sensitivity
» Cutoff frequency low pass filter 2.5 Hz (reduced detection ofreflections)

Technical data	
Operating voltage:	10 … 30 V DC
Current consumption	300 mA (12 V)
	180 mA (24 V)
Weight:	3.4 kg
Ingress protection:	IP 67
Operating temperature range:	-40 … +70 °C
Storage temperature range:	-40 … +70 °C
Working diameter:	up to 600 m (depending on transmitter)
Receiving angle:	360°
Receiving range:	560 mm
Resolution:	0.1 mm
Wavelength:	600 < λ < 1030 nm (sensivity > 30 %)
Max. sensivity:	λ 850 nm
Rotation frequency:	10 Hz … 20 Hz ±10%

CAN

Name	Article number	Measuring range	Plugs	Interfaces
LS-3000	04-60-11361	553 mm	7-pin male connector, bayonet type connection; 7-pin male connector screw type connection	CAN: 1x ISO 11898, 24 V, 125 kBit/s MOBA PWM: 1x

SIGNALING

SMART SIGNALING SOLUTION FOR OEM APPLICATIONS

Developed specifically for OEM integration, the CAN-Light provides a compact and reliable way to communicate machine status to operators. Through optical and/or acoustic signals, it indicates operating states, failures, safety conditions, and general system information.

Its seamless CAN-based communication and rugged design make it ideal for use in construction, municipal, and agricultural machinery – wherever clear and immediate feedback is essential for safe and efficient operation.

CAN-LIGHT CIRCULAR

Features

» Integrated functions to signalise approach, level or expected reactions
» Programmable text (ASCII 32 – 126)
» Up to 200 own bitmap symbols displayable
» Lightweight device for multiple mounting options

Technical data	
Operating voltage	8...32 V DC
Power consumption	max 12 W
Cable length	0.3 m
Weight	0.8 kg
Ingress protection	IP 67
Operating temperature range	-40°...+70°C
Storage temperatur range	-40°...+80°C
LED-Matrix	19 x 5
Colour scheme	RGBW

CANopen

Display modes		
Preset modes	full colour	yes
	„traffic light"	yes
	levelling	yes
	symbols	checkmark / cross/ arrows
Customizable modes	custom bitmaps	max 200
	custom texts	max 129
	custom icons for text	max 31

Buzzer	
Buzzer sound pressure	> 90 dB
Buzzer frequency	3.5 kHz ±15%
Continuous	yes
loop of short beeps	5 Hz
loop of long beeps	1 Hz
loop of SOS code	yes
customizable loops with variable length	max 4

Name	Article number	Mounting method	Orientation	Plug
CAN-Light circular	04-07-11010	4 PT screws, 10 mm length to surface or bracket, clamping to tube, 40 mm, 4 x M 5 thread in housing	Cable down / right / left	5 pin binder M12, male

CAN-LIGHT FLAT

Features

» Integrated functions to signalise approach, level or expected reactions
» Programmable text (ASCII 32 – 126)
» Up to 200 own bitmap symbols displayable
» Lightweight device for multiple mounting options

Technical data	
Operating voltage	8...32 V DC
Power consumption	max 12 W
Cable length	0.3 m
Weight	0.8 kg
Ingress protection	IP 67
Operating temperature range	-40°...+70°C
Storage temperatur range	-40°...+80°C
LED-Matrix	19 x 5
Colour scheme	RGBW

CANopen

Display modes		
Preset modes	full colour	yes
	„traffic light"	yes
	levelling	yes
	symbols	checkmark / cross/ arrows
Customizable modes	custom bitmaps	max 200
	custom texts	max 129
	custom icons for text	max 31

Buzzer	
Buzzer sound pressure	> 90 dB
Buzzer frequency	3.5 kHz ±15%
Continuous	yes
loop of short beeps	5 Hz
loop of long beeps	1 Hz
loop of SOS code	yes
customizable loops with variable length	max 4

Name	Article number	Mounting method	Orientation	Plug
CAN-Light flat	04-07-12000	4 PT screws, 10 mm length to surface or bracket	Cable left / right / up	5 pin binder M12, male

DISPLAYS & HMI

THE INTERFACE BETWEEN HUMAN AND MACHINE

Displays and operating units form the central interface between man and machine. They display operating data, warnings or process statuses in a clear and structured manner - and enable the direct control of machine functions.

MOBA offers a broad portfolio of HMI solutions for mobile machinery, ranging from compact display units and modular control panels to freely configurable touch displays. All systems are designed for high resilience in mobile use - shockproof, weather-resistant and reliable even under extreme environmental conditions.

GDH-70

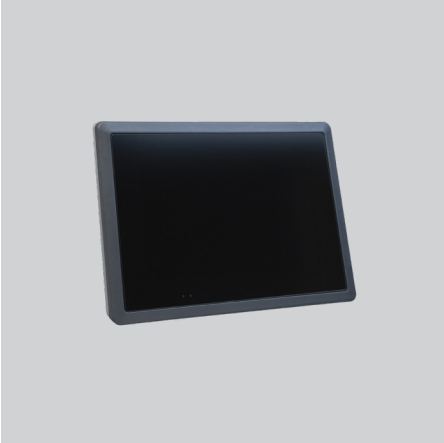
Features

» i.MX8 Quad Core Series, 4x 1,6 GHz
» 2 GB LPDDR4 RAM (optional up to 8 GB)
» 8 GB eMMC Flash (optional up to 64 GB)
» Real time clock, battery buffered
» Yocto 4 based custom Linux
» QT 6
» CoDeSys 3.5
» Customer specific frontfoil design
» Back lit metal dome keypad
» 1 RGB system status LED
» Up to 5 red status LED's above the display
» Up to 5 buttons to the left and right of the display
» Up to 7 buttons below the display
» Audio speaker 1.5W

Technical data	
Operating voltage	24V, 12V (10-32V) DC
Weight	~ 1.25 kg
Material	Plastic and Aluminium die casting
Ingress protection	IP65
Operating temperature range:	30°C to +70°C
Storage temperature range:	-30°C to +80°C
Colour display	TFT LCD transmissive
Display Size	7 inch
Format	Wide, 16:10
Display resolution	800 x 480 pixel
Luminance	1000 cd/m²
Contrast ratio	Typical 1000:1
Viewing angle	Typical 85/85/85/85, portrait & landscape
Touch	PCAP, 2 touchpoints simultaneously
Ambient brightness sensor	1 sensor
Adjustable infinitely brightness	By software
Optical bonding	Yes
Anti-reflection	Yes

Name	Article number	Plugs	Interfaces
GDH-070	04-25-40400	10-pin plug	CAN ISO 11898-2: 2x Bitrate 125 - 1000 kBit/s: Software configurable Node ID: 2x Address inputs, 3 states UART*: 2x RS232, no RTS/CTS Ethernet*: 1x 10/100/1000BASE-TX SPE: 1x 100BASE-T1, PoDL passive USB*: 1x USB 2.0 high speed, OTG ready Digital inputs*: 2x 0V/24V, positive switching Analogue camera inputs*: 4x PAL/NTSC, 1VPP, 75Ω Digital camera: Via SPE, H.264 / MJPEG Connectors must be added to access the interfaces marked with *. Please contact MOBA if required. We will find a solution.

GDT-70



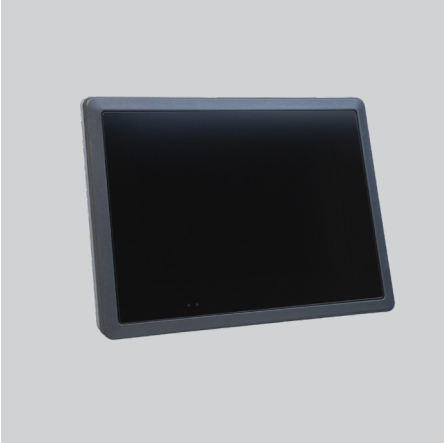
Features

» i.MX8 Quad Core Series, 4x 1,6 GHz
» 2 GB LPDDR4 RAM (optional up to 8 GB)
» 8 GB eMMC Flash (optional up to 64 GB)
» Real time clock, battery buffered
» Yocto 4 based custom Linux
» QT 6
» CoDeSys 3.5
» Mounting method: RAM MOUNT mounting flange
» Indicators: 1 RGB LED integrated in the glass
Audio: Speaker, 1.5W

Technical data	
Operating voltage	24V, 12V (10-32V) DC
Weight	~ 1.25 kg
Material	Plastic and Aluminium die casting
Ingress protection	IP65
Operating temperature range:	30°C to +70°C
Storage temperature range:	-30°C to +80°C
Colour display	TFT LCD transmissive
Display Size	7 inch
Format	Wide, 16:10
Display resolution	800 x 480 pixel
Luminance	1000 cd/m²
Contrast ratio	Typical 1000:1
Viewing angle	Typical 85/85/85/85, portrait & landscape
Touch	PCAP, 2 touchpoints simultaneously
Ambient brightness sensor	1 sensor
Adjustable infinitely brightness	By software
Optical bonding	Yes
Anti-reflection	Yes

Name	Article number	Plugs	Interfaces
GDT-070	04-25-40300	10-pin plug	CAN ISO 11898-2: 2x Bitrate 125 - 1000 kBit/s: Software configurable Node ID: 2x Address inputs, 3 states UART*: 2x RS232, no RTS/CTS Ethernet*: 1x 10/100/1000BASE-TX SPE: 1x 100BASE-T1, PoDL passive USB*: 1x USB 2.0 high speed, OTG ready Digital inputs*: 2x 0V/24V, positive switching Analogue camera inputs*: 4x PAL/NTSC, 1VPP, 75Ω Digital camera: Via SPE, H.264 / MJPEG Connectors must be added to access the interfaces marked with *. Please contact MOBA if required. We will find a solution.

GDT-100



Features

» i.MX8 Quad Core Series, 4x 1,6 GHz
» 2 GB LPDDR4 RAM (optional up to 8 GB)
» 8 GB eMMC Flash (optional up to 64 GB)
» Real time clock, battery buffered
» Yocto 4 based custom Linux
» QT 6
» CoDeSys 3.5
» Mounting method: RAM MOUNT mounting flange
» Indicators: 1 RGB LED integrated in the glass
Audio: Speaker, 1.5W

Technical data	
Operating voltage	24V, 12V (10-32V) DC
Weight	~ 1.9kg
Material	Plastic and Aluminium die casting
Ingress protection	IP65
Operating temperature range:	30°C to +70°C
Storage temperature range:	-30°C to +80°C
Colour display	TFT LCD transmissive
Display Size	10 inch
Format	Wide, 16:10
Display resolution	1280 x 800 pixel
Luminance	1000 cd/m²
Contrast ratio	Typical 1000:1
Viewing angle	Typical 85/85/85/85, portrait & landscape
Touch	PCAP, 2 touchpoints simultaneously
Ambient brightness sensor	1 sensor
Adjustable infinitely brightness	By software
Optical bonding	Yes
Anti-reflection	Yes

Name	Article number	Plugs	Interfaces
GDT-100	04-25-40200	10-pin plug	CAN ISO 11898-2: 2x Bitrate 125 - 1000 kBit/s: Software configurable Node ID: 2x Address inputs, 3 states UART*: 2x RS232, no RTS/CTS Ethernet*: 1x 10/100/1000BASE-TX SPE: 1x 100BASE-T1, PoDL passive USB*: 1x USB 2.0 high speed, OTG ready Digital inputs*: 2x 0V/24V, positive switching Analogue camera inputs*: 4x PAL/NTSC, 1VPP, 75Ω Digital camera: Via SPE, H.264 / MJPEG Connectors must be added to access the interfaces marked with *. Please contact MOBA if required. We will find a solution.

MMC-1000

Technical data	
Operating voltage	10 … 30 V DC
Current consumption	300 mA (24 V)
Weight	1.1 kg
Ingress protection	IP 67
Operating temperature range	-25 … +70 °C
Storage temperature range	-25 … +85 °C

Features

» Universal operation on different types of maschines
» Flexible applications
» CAN-based sensor selection
» Flexible sensor combination
» Ergonomic, intuitive 4-button design

Name	Article number	LC display	Plugs	Interfaces
MMS-1000	04-25-10300	3½ digit, sealed, integrated lighting	12-pin plug (Bayonet connection) 7-pin plug (Bayonet connection)	Power outputs: 1x ON / OFF, NPN, max. 3 A 1x ON / OFF, PNP, max. 2,5 A Analog outputs: 1x PROP, PNP, max. 2,5 A 1x SERVO, max. 250 mA CAN: 1x ISO 11898, 24 V, 125 kBit/s,

MOBA-MATIC II

Features

» Universal operation on different types of maschines
» Flexible applications
» CAN-based sensor selection
» Flexible sensor combination
» Ergonomic, intuitive 4-button design
» Additional display of a sensor value
» Brillante TFT color display, backlight adjustable
» Adjustable LED brightness
» Key illumination switchable
» Multilingual Service Menu

Technical data	
Operating voltage	10 … 30 V DC
Current consumption	300 mA (24 V)
Weight	1.3 kg
Ingress protection	IP 67
Operating temperature range	-20 … +70 °C
Storage temperature range	-30 … +80 °C
Backlight	Adjustable brightness
LED	Adjustable brightness

CAN

Name	Article number	TFT colour graphic display	Plugs	Interfaces
MMS-1000	04-25-10300	3,5“ , optical bonding	12-pin plug (Bayonet connection) 7-pin plug (Bayonet connection)	Power outputs: 1x ON / OFF, NPN, max. 3 A 1x ON / OFF, PNP, max. 2,5 A Analog outputs: 1x PROP, PNP, max. 2,5 A 1x SERVO, 10 ... 2500 mA CAN: 1x ISO 11898, 24 V, 125 kBit/s,

GS-506

Technical data	
Voltage range	10 … 30 V DC
Current consumption	< 500 mA / > 250 m
Weight	1.7 kg
Ingress protection	IP 54
Operating temperature range	-20 … +60 °C
Storage temperature range	-30 … +65 °C

Name	Article number	Plugs	Interfaces
GS-506	04-25-50040-A02	Multistick left, right Masterswitch CAN	1x CAN

MINI-OPERAND

Features

» Android Platform
» Very powerful processors
» Robust mobile on-board computer
» Developed for the use in motor vehicles (waste disposal) and in harsh environments
» Device useable as tablet or for fixed installation
» Display with high resolution
» Easily readable in sunlight
» Direct connection to the CAN bus via cradle/holder
» Various integrated radio services
» Can also be used as a navigation system
» Telephony possible
» Integrated RFID reader for various technologies
» Real time clock with wake-up function

Technical data	
Current consumption	1,5 A max / 5 V USB 1,2 A max. / 12 V vehicle voltage 0,6 A max. / 24 V vehicle voltage
Battery	Li-Ion battery 3,6 V / 3,5 Ah
Weight:	0.4 kg
Ingress protection	IP 54
Operating temperature range	-20 … +60°C
Storage temperature range	-20 … +60°C
RAM	2 GB LPDDR3
Application processor	Octa ARM Cortex-A53 cores up to 1,8 GHz 64 bit processor
Display resolution	854 x 480 pixel
Display size	5” color TFT
Format	16:9, up to 600 cd/m2
Adjustable infinitely brightness	Yes
Ambient brightness sensor	Yes
Additional display elements	Multicolor LED

Name	Article number	Mounting method	Flash	Interfaces
Mini Operand	04-55-0230	Connection for RAM-mount, connection cable (5 m)	16 GB eMMC 8 GB Micro SDHC card supports up to 128 GB	CAN: 2x USB: 2.0 Digital Input:High active threshold 8 V Wireless: 4G/LTE/GSM, BT 4.2 BLE, WiFi 2.4 GHz, 802.11/b/g/n Positioning: GNSS, WiFi SIM: Micro-SIM, 3FF (internal card socket); SIM chip (later available with additional chip)

HMI MC

Technical data	
Voltage range	8 … 32 V DC
Maximum power input	3,5 W
Weight	1.7 kg
Operating temperature range	-30 ... +75°C
Storage temperature range	-40 ... +80 °C
Ingress protection	P24

Name	Article number	Module	Interfaces
HMImc	04-26-35060	3 Modules, 2x Joysticks, 1 keypad, neutral front foil	CAN-interface : ISO 11898-24V 250kBit/s CANopen

HMI MC

Technical data	
Voltage range	8 … 32 V DC
Maximum power input	3,1 W
Weight	700 g
Operating temperature range	-30 ... +75°C
Storage temperature range	-40 ... +80 °C
Ingress protection	P24

Name	Article number	Module	Interfaces
HMImc	04-26-15050	1 module, 16 keys, neutral front foil	CAN-interface : ISO 11898-24V 250kBit/s CANopen

CONTROLLER

INTELLIGENT CONTROL UNITS FOR MOBILE MACHINERY

Controllers are at the heart of modern automation systems. They process sensor data, execute control commands, and coordinate all essential machine functions – in real time and under varying conditions. They enable smooth communication between sensors, HMIs, and actuators. They run control algorithms, manage safety functions, and interface with other components via standardized protocols.

MOBA's controllers are developed specifically for outdoor use – robust, high-performance, and freely programmable. They integrate easily into OEM systems and provide a reliable platform for automated, connected, and efficient machine processes.

MSPC

Features

» Cast Aluminium
» Small Footprint 130 x82 x35 mm
» 3x RGB Status LED
» All GNSS Frequencies any constellation

Technical data	
Normal operating voltage	12 V DC / 24 V DC
Operating voltage	8 ... 36 V DC
Weight	0.4 kg
Material	Cast aluminium
Ingress protection	IP 65
Operating temperature range:	-40 °C ... +85 °C
Storage temperature range:	-40 °C ... +85 °C
WEB Interface	yes
Dual RTK GNSS in Centimeter Level	yes
RTCM Data	via RS232 or NTRIP
Update rate	20 Hz
Internal 6Axis IMU for Sensor Fusion	yes
GNSS Heading	0.1 ° / m Baseline
GNSS Pitch	0.3 ° / m Baseline

Name	Article number	Project memory	GNSS	Interfaces
MSPC	04-25-70721	8 GB	GPS, GLONASS, Galleo, Beidou, QZSS	CAN: 2x CAN FD (J1939 / CANOpen) RS232: 2x USB: 1x Full Speed Ethernet and SPE: 1x

HLC-INTERFACE-BOX

Features

» Hidden cabling
» CAN, and RS-232 gateway

Technical data	
Operating voltage	8 ... 35 V DC
Current consumption	ca. 0.1 W
Weight	ca. 1.3 kg
Size (LxWxH)	217 x 139 x 37 mm
Weight	0.3 kg
Ingress protection	IP 67
Operating temperature range	–25 ... +70 °C
Storage temperature range	–30 ... +80 °C

CAN

	Article number	Plugs	Interfaces
HLC-Interface Box	03-05-03085	Power cable: open end, 2 m Display: M12, 8 pol, female CAN: M12, 5 pol, female COM2: M12, 5 pol, female Printer: M12, 5 pol, female I/O: (M12, 8 pol, female)	CAN: ISO 11898 - 24 V; 250 kBit/sec. Display: ISO 11898 - 24 V; 250 kBit/sec. COM2: RS 232 Printer: RS 232 I / O: 2x Input, 2x Output

LKC-120

Expandable options

» 2 digital PWM outputs
» 4 RS232 interfaces
» 8-hole socket M12 Y-encoded:
- SPE / Ethernet
- USB

Technical data	
Nominal operating voltage	12 V DC / 24 V DC
Operating voltage	8 ... 32 V DC
Mounting method	4 bolts, 5 mm
Colour	Aluminium
Weight	1.15 kg
Material	Cast aluminium
Ingress protection	IP 67
Operating temperature range	–40 ... +80 °C
Storage temperature range	–40 ... +85 °C

CAN

Name	Article number	Processor parameter	Interfaces
LKC-120	04-25-70711	Processor type: 2x STM32F7 EEPROM: 2x 128 Kbit FRAM: 2x 1 Mbit Real time clock: Yes Temperature Sensor: Yes	Analog inputs, each programmable Bitrate CAN, programmable CAN ISO 11898 Digital inputs, each programmable

MPC-330

Technical data	
Voltage range	8 ... 30 V DC
Current consumption	≤ 250 mA @ 24 V
Processor system	2xXC167
Operating temperature range	–30 ... +80 °C
Storage temperature range	–30 ... +80 °C
Ingress protection	IP 67
Weight	2 kg
Storage temperature range	–30 ... +80 °C

Name	Article number	Memory	Interfaces
MPC-330	04-25-70290-A01	2x4 MByte serieller Flash 2x2 MByte RAM 2x8 KByte FRAM 2x128 KByte EEPROM	3x CAN ISO 11898 24 V 50 kBit/s ... 1MBit/s from that 1x uC A, 1x uC B, 1x uC A+B

MLC-508

Technical data	
Operating voltage	10 ... 30 V DC
Current consumption	200 mA without load
Weight	1.5 kg
Ingress protection	IP 67
Operating temperature range	–20 ... +70 °C
Storage temperature range	–40 ... +70 °C
Size (LxWxH)	164 mm x 144 mm x 51 mm

CAN

Name	Article number	Plugs	Interfaces
MLC-508	04-25-30076	Sensor left: 7pin connector, bayonet Sensor right: 7pin connector, bayonet Machine: 19pin connector, screw	CAN: 3 x CAN ISO 11898, 24 V, 125 kBit/s Valve outputs: 7 x current controlled Output current: max. 3 A per valve Output resolution: <1 mA

REMOTE CONNECTION

REMOTE ACCESS FOR EFFICIENCY, SERVICE, AND SYSTEM AVAILABILITY

Remote connection solutions enable secure access to machines and systems – anytime and from anywhere. They form the backbone of modern support, predictive maintenance, and efficient diagnostics – directly via remote connection. This minimizes downtime, reduces service costs, and enables data-driven business models in machine operation.

CG1

Features

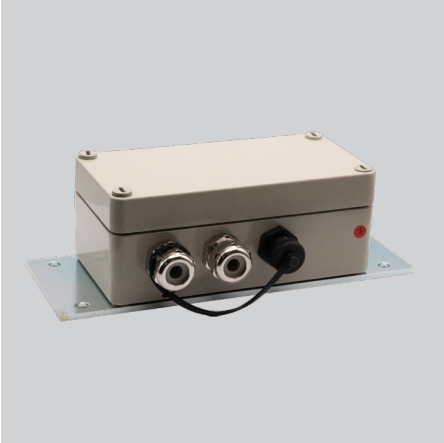
» MOBA platform product.
» MOBA Cloud compatible.
» Prepared for mounting outside the driver´s cab.
» Other variants available

Technical data	
Operating voltage	8 … 32 V (DC)
Current consumption	Typ. 100 mA @ 24 V
Standby current	Typ. 80 µA
Weight	1,0 kg
Material	Polyester, fiber-glass reinforced
Ingress protection	IP67
Operating temperature range	-25 … +75 °C
Storage temperature range	-25 … +75 °C
Colour range	Monochrom
Display resolution	128 x 64 pixel
Backlight	LED

CANopen

Name	Article number	Control unit	Processor parameter	Interfaces
CG1	04-55-02611	Membrane keyboard, 16 buttons	ARM® Cortex M3 1 MByte serial Flash 132 kByte SRAM 8 kByte FRAM	CAN: 2x Clean Open / J1939 RS-232: 3x

CG1 WITHOUT DISPLAY



Features

» MOBA platform product.
» MOBA Cloud compatible.
» Prepared for mounting outside the driver´s cab.
» Other variants available

Technical data	
Operating voltage	8 … 32 V (DC)
Current consumption	Typ. 100 mA @ 24 V
Standby current	Typ. 80 µA
Weight	1,0 kg
Material	Polyester, fiber-glass reinforced
Ingress protection	IP67
Operating temperature range	-25 … +75 °C
Storage temperature range	-25 … +75 °C

CANopen

Name	Article number	Processor parameter	Interfaces
CG1 without display	04-55-02636	ARM® Cortex M3 1 MByte serial Flash 132 kByte SRAM 8 kByte FRAM	CAN: 2x Clean Open / J1939 RS-232: 3x

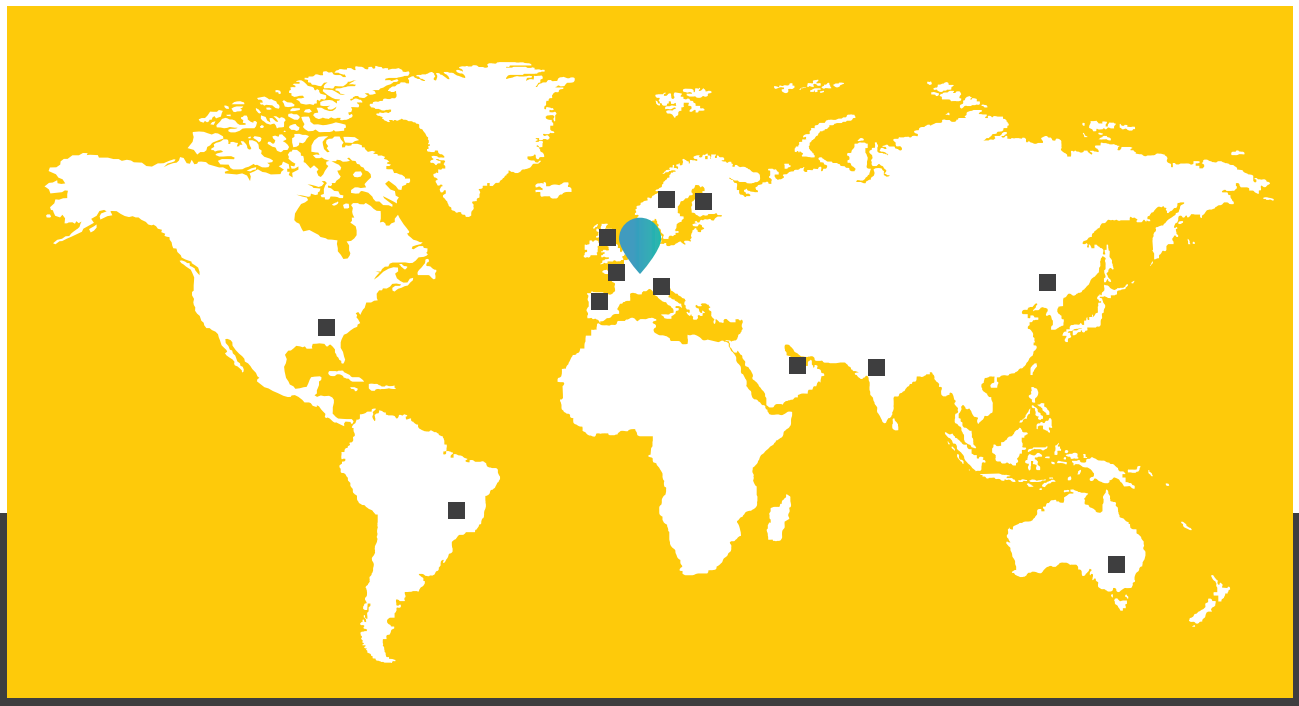
CGW

Technical data	
Name	Cloud Gateaway WIFI
Article number	04-21-20610
Operating voltage	8 … 32 V DC
Current consumptioin	max. 200 mA
Connection	M12 A-CODING (CiA 303)
Operating temperature range	-20°...+70°C
Storage temperature range	-40°...+70°C
Memory	512 MB Flash
Housing	PA6.6 GK30, RAL 1021
Size	80 x 70 x 35 mm
Ingress protection	IP55, electronics coated
Weight	110 g
Status LED	CAN status / WIFI status
Interfaces	CAN (CANOpen), WLAN IEEE 802.11 b/g/n

MOBA GROUP

The MOBA Group has been an established name in mobile automation for more than 50 years. Our know-how and many years of experience in automation technology distinguish us as globally recognized experts. We develop and produce innovative machine control systems, identification and mobile weighing technologies as well as flexible software solutions. But MOBA components and systems are also used in other areas where robust and reliable sensors, controllers and operating units are required.

First Choice In Mobile Automation - that's what MOBA has stood for for more than 50 years!



MOBILE AUTOMATION

CONTACT

MOBA Mobile Automation AG
Kapellenstraße 15
65555 Limburg I Germany
moba-automation.de