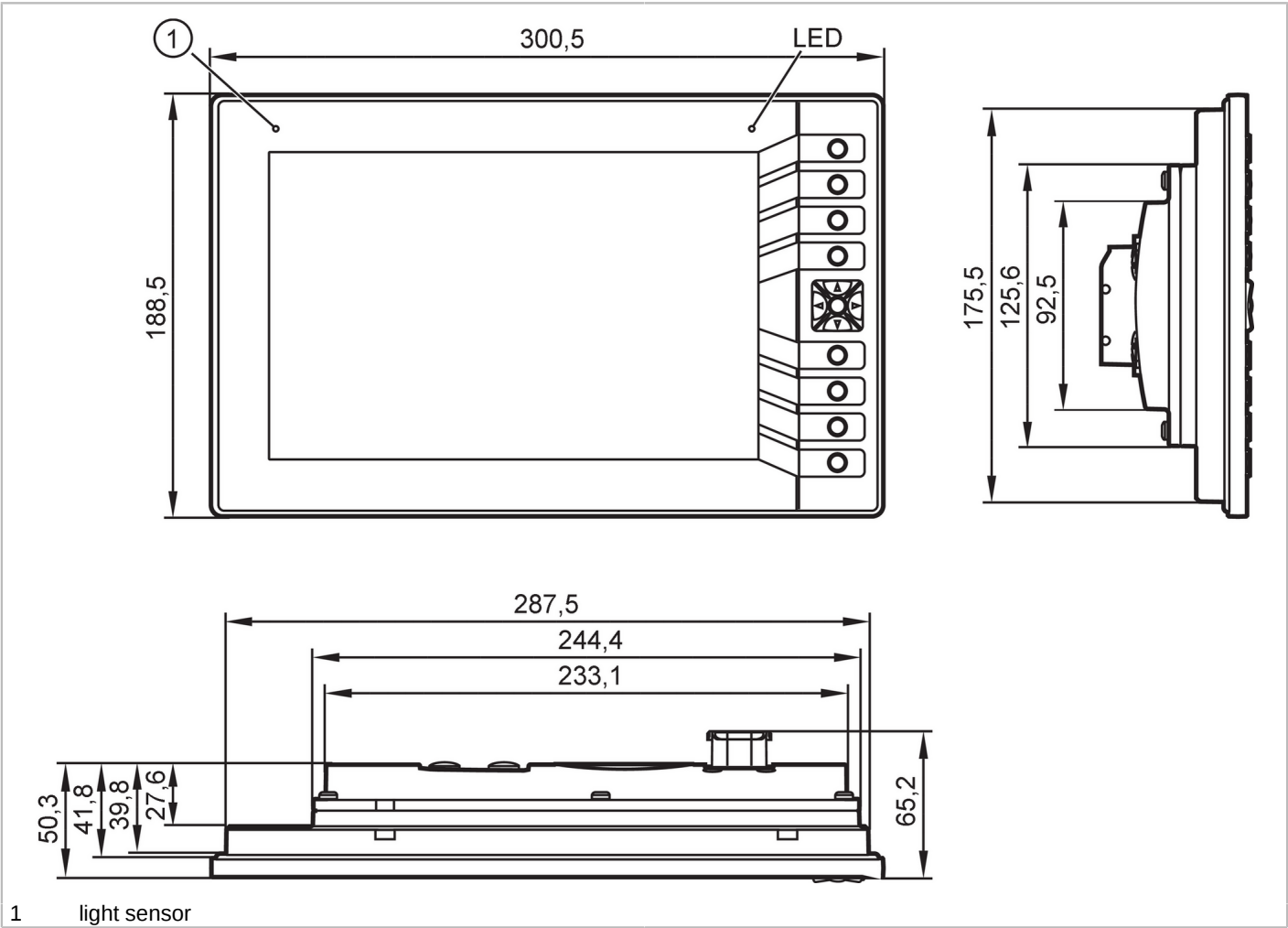


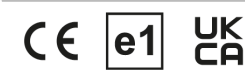


Programmable Human Machine Interface

ecomatDisplay/10"/Touch



1 light sensor



Product characteristics

Communication interface	Ethernet; CAN; USB	
Operating elements	8	Operating elements
	1	Navigation key with pushbutton
Display type	color display with touch function	

Electrical data

Operating voltage	[V]	8...32 DC
Nominal voltage DC	[V]	12 / 24
Current consumption	[mA]	< 1250; (24 V DC; with switched outputs: < 6250 mA)
Power consumption	[W]	30

Inputs / outputs

Number of inputs and outputs	Number of digital inputs: 2; Number of digital outputs: 2
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Inputs

Number of digital inputs	2
Number of video inputs	4; (analog)
Video input	PAL, NTSC
Audio input	Stereo Line-In



Programmable Human Machine Interface

ecomatDisplay/10"/Touch

Outputs	
Number of digital outputs	2
Max. current load per output [mA]	2500
Audio output	Stereo Line-Out; Headphones Out
Software / programming	
Parameter setting options	CODESYS 3.5
PLC function to IEC 61131-3	yes
Operating system	Embedded Linux 4.14
Interfaces	
Communication interface	Ethernet; CAN; USB
Number of CAN interfaces	4
Number of Ethernet interfaces	2
Number of USB interfaces	2
Number of video interfaces (CVBS)	4
CAN	
Transmission rate	20 kBit/s... 1 MBit/s
Protocol	CANopen; SAE J1939; free protocol
Profile	CiA DS 301 Version 4; CiA DS 401 Version 1.4
Interface	CAN Interface 2.0 A/B ISO 11898
Ethernet	
Transmission standard	10Base-T; 100Base-TX
Transmission rate	100 MBit/s
Protocol	TCP/IP; UDP; Modbus TCP; OPC UA; EtherNet/IP
Note on interfaces	OPC UA Micro Embedded Device Server
USB	
Transmission rate	< 480 MBit/s
Version	2.0
Operating conditions	
Ambient temperature [°C]	-35...65
Note on ambient temperature	2000 m: -30...65 °C
	3000 m: -30...60 °C
Storage temperature [°C]	-35...85
Max. relative air humidity [%]	90; (non condensing)
Max. height above sea level [m]	3000
Protection	IP 65; IP 67; (for inserted connectors with individually sealed cores and inserted M12 connectors or sealing caps: IP 67)
Degree of soiling	2



Programmable Human Machine Interface

ecomatDisplay/10"/Touch

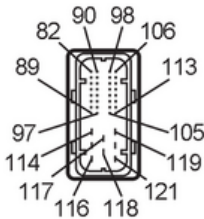
Tests / approvals		
EMC	UN/ECE-R10 Noise emission and noise interference:	100 V/m
	DIN EN 61000-6-2 ESD	
	DIN EN 61000-6-4 Burst	
	ISO 7637-2 pulse 1	severity level 4 / function state C (24 V)
	ISO 7637-2 pulse 2a	severity level 4 / function state A (24 V)
	ISO 7637-2 pulse 2b	severity level 4 / function state C (24 V)
	ISO 7637-2 pulse 3a	severity level 4 / function state A (24 V)
	ISO 7637-2 pulse 3b	severity level 4 / function state A (24 V)
	ISO 7637-2 pulse 4	severity level 4 / function state A (24 V)
	ISO 7637-2 pulse 5	severity level 3 / function state C (24 V)
	ISO 7637-2 pulse 4	severity level 4 / function state A (12 V)
Continuous shock resistance	ISO 16750-3	30 g 6 ms / 24000 shocks
Fast temperature changes	EN 60068-2-30 damp heat: cyclical	55 °C upper temperature limit / 6 cycles
	EN 60068-2-78 damp heat: constant	40 °C 93 % rH / test period 21 days
Vibration resistance	ISO 16750-3 Test VII	random, mounting place car body
	EN 60068-2-6 Sinus	10...500 Hz / 10 cycles/axis, sine
Salt spray test	EN 60068-2-52 Salt spray	severity level 3 / motor vehicle
MTTF [years]		37
Mechanical data		
Weight [g]		136.5
Housing		rectangular
Type of mounting		panel/surf.
Dimensions [mm]		188.5 x 300.5 x 65.2
Material		diecast aluminium powder-coated; Display: glass anti-reflective and hardened
Information on service life	Pushbuttons:	1000000 Betätigungen
	Navigation key with pushbutton:	1000000 Betätigungen
	Display LED lifetime:	> 70000 h
Displays / operating elements		
Display	Status LED	1 LED, RGB
	Operating elements	LED, RGB
Operating elements	8	Operating elements
	1	Navigation key with pushbutton
Display resolution		1280 x 800
Display type		color display with touch function
Display size		10"
Aspect ratio		16:10
Display background illumination		LED
Color depth		24 Bit
Brightness [cd/m²]		< 1000; (adjustable: 0...100 %; In steps of: 1 %)
Contrast ratio		1500:1
Touchscreen version		PCAP
Hardware		
Processor		ARM Quad Core 64 Bit 1,2 GHz
Working memory		1 GByte RAM



Programmable Human Machine Interface

ecomatDisplay/10"/Touch

Mass storage	8 GByte Flash
Data memory	
Real-time clock	yes; UTC, battery buffered
Remarks	
Pack quantity	1 pcs.
Electrical connection - AMP connector	



82	VIDEO3_GND
83	IFM0-
84	CAN0_L
85	CAN1_L
86	CAN2_L
87	CAN3_L
88	IFM1-
89	SERVICE1
90	VIDEO3_SIGNAL
91	IFM0+
92	CAN0_H
93	CAN1_H
94	CAN2_H
95	CAN3_H
96	IFM1+
97	SERVICE0
98	VIDEO0_GND
99	VIDEO1_GND
100	VIDEO2_GND
101	AUDIO_IN_R
102	AUDIO_GND
103	HEAD_OUT_R
104	AUDIO_OUT_R
105	AUDIO_OUT_L
106	VIDEO0_SIGNAL
107	VIDEO1_SIGNAL
108	VIDEO2_SIGNAL
109	AUDIO_IN_L
110	n.c.
111	HEAD_OUT_L
112	AUDIO_OUT_R+
113	AUDIO_OUT_L+
114	VBB0
115	IN0
116	IN1
117	OUT0
118	OUT1
119	VBB15
120	GND
121	VBB30



Programmable Human Machine Interface

ecomatDisplay/10"/Touch

Electrical connection - ETH0



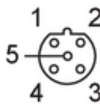
1	TxD+
2	RxD+
3	TxD-
4	RxD- Schirm am Gehäuse aufgelegt

Electrical connection - ETH1



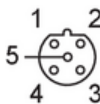
1	TxD+
2	RxD+
3	TxD-
4	RxD- Schirm am Gehäuse aufgelegt

Electrical connection - USB0



1	+ 5 V DC
2	- Data
3	+ Data
4	ID
5	GND Schirm am Gehäuse aufgelegt

Electrical connection - USB1



1	+ 5 V DC
2	- Data
3	+ Data
4	ID
5	GND Schirm am Gehäuse aufgelegt