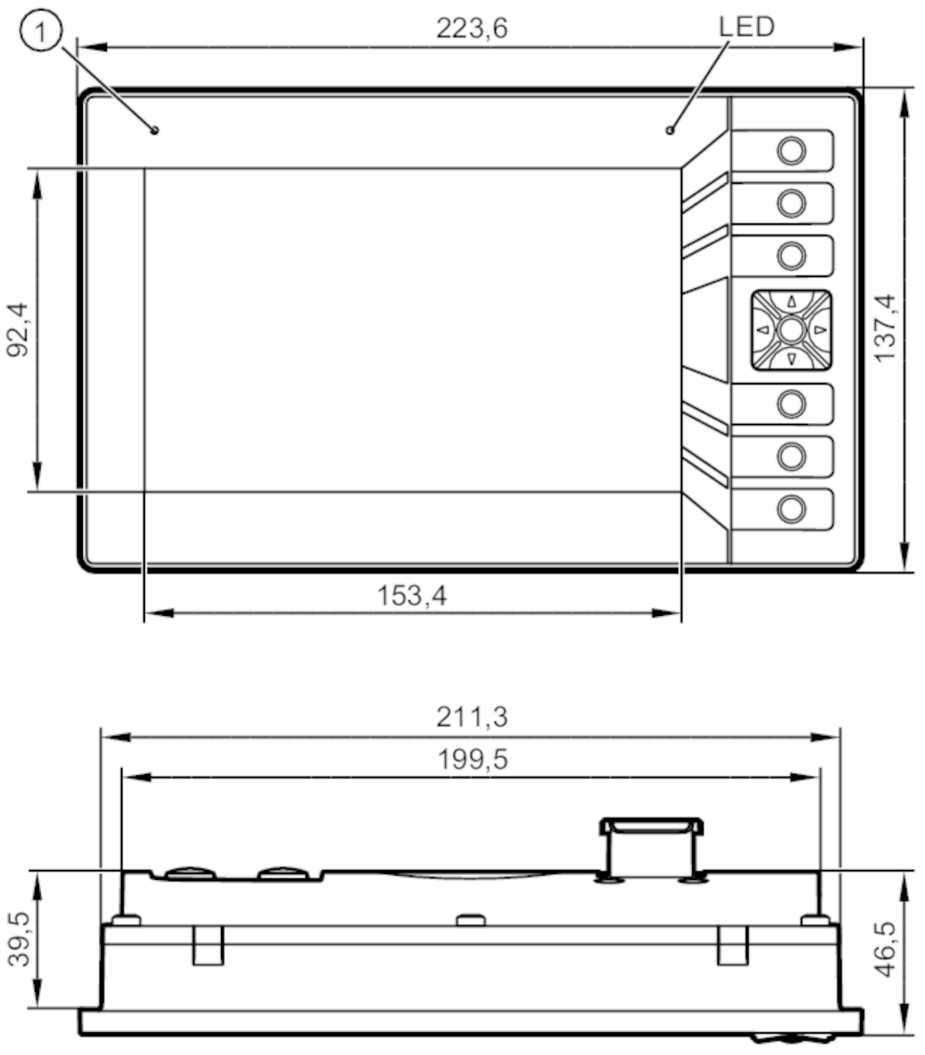
CR1077

Programmable graphic display for controlling mobile machines

ecomatDisplay/7"/Touch



1 light sensor

Electrical data		
Operating voltage	[V]	8...32 DC
Nominal voltage DC	[V]	12 / 24
Current consumption	[mA]	< 5000
Power consumption	[W]	27
Inputs / outputs		
Number of inputs and outputs		Number of digital inputs: 2; Number of digital outputs: 2
Inputs		
Number of digital inputs		2
Number of video inputs		4; (analogue)
Video input		1 Vss, 75 Ohm, PAL, NTSC
Audio input		Stereo Line-In; -10 dBV (= 0,316 V); Max 0 dBV (= 1 V)

CR1077

Programmable graphic display for controlling mobile machines

ecomatDisplay/7"/Touch

Outputs		
Number of digital outputs		2
Max. current load per output	[mA]	2500
Switching frequency DC	[Hz]	< 20
Audio output		Stereo Class D; 1W; 8 Ω; BTL
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
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
Factory settings		Transmission rate: 250 kBit/s
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...60
Note on ambient temperature		2000 m: -30...65 °C
		3000 m: -30...60 °C
		The temperature of the mainboard must not exceed 85 °C.
		for further information please see the operating instructions
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)
Pollution degree		2
Chemical media	ISO 16750-5	AA, BA, BD, HLP, CC, DB, DC, DD, CA
		only one chemical permitted at a time

CR1077

Programmable graphic display for controlling mobile machines

ecomatDisplay/7"/Touch

Tests / approvals			
EMC		UN/ECE-R10 noise emission and noise immunity:	100 V/m
		DIN EN 61000-6-2 ESD	
		DIN EN 61000-6-4 Burst	
		ISO 10605 ESD	
		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 change		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	
Railway applications		DIN EN 50155 Pkt 12.2	
		EN 50121-3-2	
		EN 55016	
Mechanical data			
Weight	[g]	1512	
Type of mounting		for mounting base	
Dimensions	[mm]	223.6 x 137.4 x 46.5	
Materials		housing: 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 Lebensdauer:	> 70000 h
Displays / operating elements			
Display		status LED	1 LED, multi-colour freely programmable
Operating elements		6	freely programmable backlit function keys
		1	navigation key with pushbutton
Display resolution		800 x 480	
Display type		colour display in optical bonding technology	
Display size		7"	
Aspect ratio		16:10	
Display background illumination		LED	
Colour depth		18 Bit	
Brightness	[cd/m²]	< 800; (adjustable: 0...100 %; In steps of: 1 %)	
Contrast ratio		1000:1	
Touchscreen version		PCAP	

CR1077

Programmable graphic display for controlling mobile machines

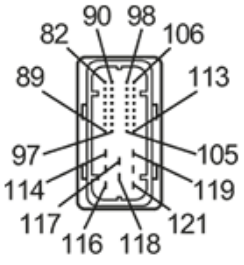
ecomatDisplay/7"/Touch

Hardware	
Processor	ARM Quad Core 64 Bit 1,2 GHz
RAM	1 GByte RAM
Mass storage	8 GByte Flash
Non-volatile memory	16 kByte

Data memories	
Real-time clock	yes; UTC, battery buffered

Remarks	
Pack quantity	1 pcs.

Electrical connection - AMP connector



Inputs

82	VIDEO3_GND
90	VIDEO3_ SIGNAL
98	VIDEO0_GND
99	VIDEO1_GND
100	VIDEO2_GND
101	AUDIO_IN_R
102	AUDIO_GND
106	VIDEO0_SIGNAL
107	VIDEO1_SIGNAL
108	VIDEO2_SIGNAL
109	AUDIO_IN_L
115	IN0
116	IN1

Interfaces

83	IFM0-
84	CAN0_L
85	CAN1_L
86	CAN2_L
87	CAN3_L
88	IFM1-
89	SERVICE1
91	IFM0+
92	CAN0_H
93	CAN1_H
94	CAN2_H
95	CAN3_H
96	IFM1+
97	SERVICE0

CR1077

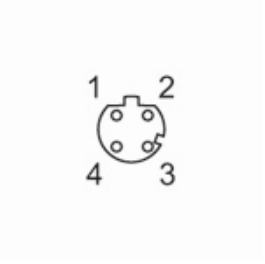
Programmable graphic display for controlling mobile machines

ecomatDisplay/7"/Touch

Outputs	
103	HEAD_OUT_R
104	AUDIO_OUT_R-
105	AUDIO_OUT_L-
111	HEAD_OUT_L
112	AUDIO_OUT_R+
113	AUDIO_OUT_L+
117	OUT0
118	OUT1

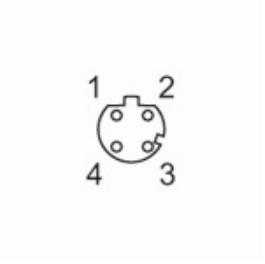
power supply	
114	VBB0
119	VBB15
120	GND
121	VBB30

Electrical connection - ETH0



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

Electrical connection - ETH1



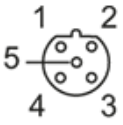
1	TxD+
2	RxD+
3	TxD-
4	RxD- Schirm am Gehäuse aufgelegt

CR1077

Programmable graphic display for controlling mobile machines

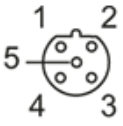
ecomatDisplay/7"/Touch

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