

# WE CABIN DISPLAY i12

Intelligent HMI Solutions



**WEcabin Display i12** is an intelligent HMI solution for mobile machines and commercial vehicles developed by Würth Elektronik ICS.

### Description

- Robust housing for the use in tough environmental conditions
- High-end processing power through 64-bit multicore processors and memory size
- High optical performance ensures good readability in all lighting conditions
- Optical bonding enhance visibility and reliability
- Optional plug-in expansion module for input video functionalities and customisation possibility
- Easy to customise for individual design of graphical user interface (GUI) with WEcabin Designer

### Technical data

General information	
Processor	Quad Core ARM Cortex-A53
RAM	2 GB DDR3
Clock frequency	1.6 GHz
Flash memory	8 GB
FRAM	64 Kb
Real time clock	Rechargeable lithium battery
Operating temperature	-30 °C to +70 °C
Storage temperature	-40 °C to +85 °C
Ingress protection	IP66 IP69K (front part) for the version without buttons
Operating voltage	8 V to 32 V DC
Power consumption	500 mA at 24 V
Stand-by mode consumption	2 mA
Housing	POLIMID PA6 UV
Connectors	AMP SUPERSEAL 34 Way connector, 2 x 60 pins connectors for Expansion Modules
Dimensions max.	300 x 220.5 x 52 mm
Signaling	Internal buzzer (90 dB)
Weight	2.0 kg

Interfaces		
CAN bus	2 x CAN 2.0B	11/29 Bits extended address identifier
	Baud rate	50 kBit/s to 1000 kBit/s (250 kBit/s default value)
Ethernet	1 x 10/100 Mbit/s	
USB	2 x 2.0 Host full speed 12 MB	
RS-485	1 x up to 150 kBd	
Wi-Fi	802.11n	
Bluetooth	BT4.0	

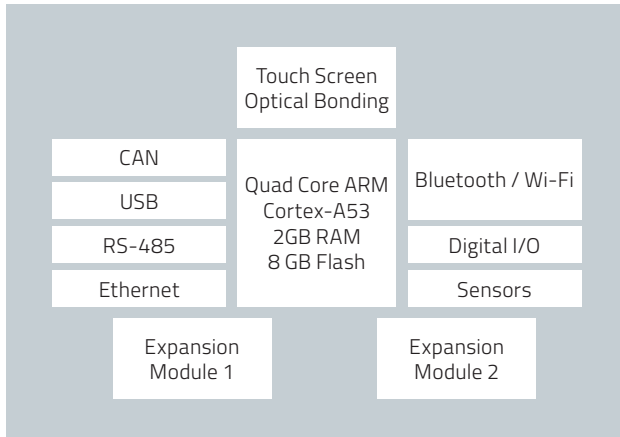
Inputs & Outputs Overview		
4	Digital inputs	High side 0 -24 V
4	Digital outputs	Low side 500 mA at 24 V

Display Specifications	
Display	12.1" TFT LCD 16:10
Resolution	1280 x 800 WVGA 125 PPI
Backlight	LED
Brightness	500 cd/m <sup>2</sup>
Light sensor	included
ON / OFF LED	included
Orientation	Landscape or portrait programmable mode
Colors	24 bit
Contrast ratio	600:1
Cover glass	3.2 mm thickness tempered glass
TFT installation	Liquid optical bonding

Physical Input	
Touch interface	PCAP multi touch screen
Buttons	No buttons

Sensors	
3-axis digital accelerometer	✓
Temperature sensor	✓
Light sensor	✓

## Hardware map

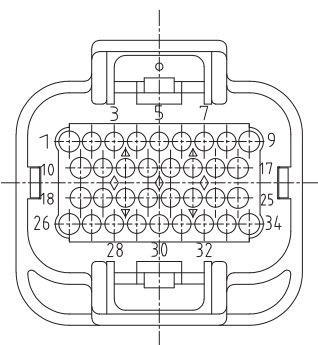


TE Connectivity AMP SUPERSEAL 34 Way Connector  
Part No. 4-1437290-0



TE Connectivity AMP SUPERSEAL 1.0 mm Connector  
Receptacle Contact Assembly, AWG 16  
Part No. 3-1447221-3

TE Connectivity AMP SUPERSEAL 1.0 mm Connector  
Receptacle Contact Assembly, AWG 20  
Part No. 3-1447221-4



Pinout of the connector

## Pin assignment

Pin	Signal	Description
1	GND	Ground
2	IN2	Digital input 2
3	IN1	Digital input 1
4	USB1_GND	USB 1 Ground
5	RX_N	Receive negative
6	RX_P	Receive positive
7	TX_N	Transmit negative
8	TX_P	Transmit positive
9	VBAT	Power supply battery
10	IN4	Digital input 4
11	IN3	Digital input 3
12	GND	Ground
13	USB2_GND	USB 2 ground
14	VBUS2	USB 2 +5 V DC
15	VBUS1	USB 1 +5 VDC
16	GND	Ground
17	V_SW	Ignition voltage
18	OUT1	Digital output 1
19	OUT2	Digital output 2
20	CAN2_H	CAN 2 High (WEcabin Designer CAN 1)
21	CAN1_H	CAN 1 High (WEcabin Designer CAN 0)
22	USB2H_DM	USB 2 Data minus
23	USB1_DM	USB 1 Data minus
24	RXD	Serial port received data
25	GND24	Power supply ground
26	NC	Reserved, not connected
27	OUT3	Digital output 3
28	OUT4	Digital output 4
29	CAN2_L	CAN 2 Low (WEcabin Designer CAN 1)
30	CAN1_L	CAN 1 Low (WEcabin Designer CAN 0)
31	USB2H_DP	USB 2 Data plus
32	USB1_DP	USB 1 Data plus
33	TXD	Serial port transmitted data
34	SHIELD	Shield protection

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## Programming environment

Software	
Operating system	Linux Embedded
Application programming	WEcabin Designer CoDeSys™ PLC (optional) Qt™ (optional)

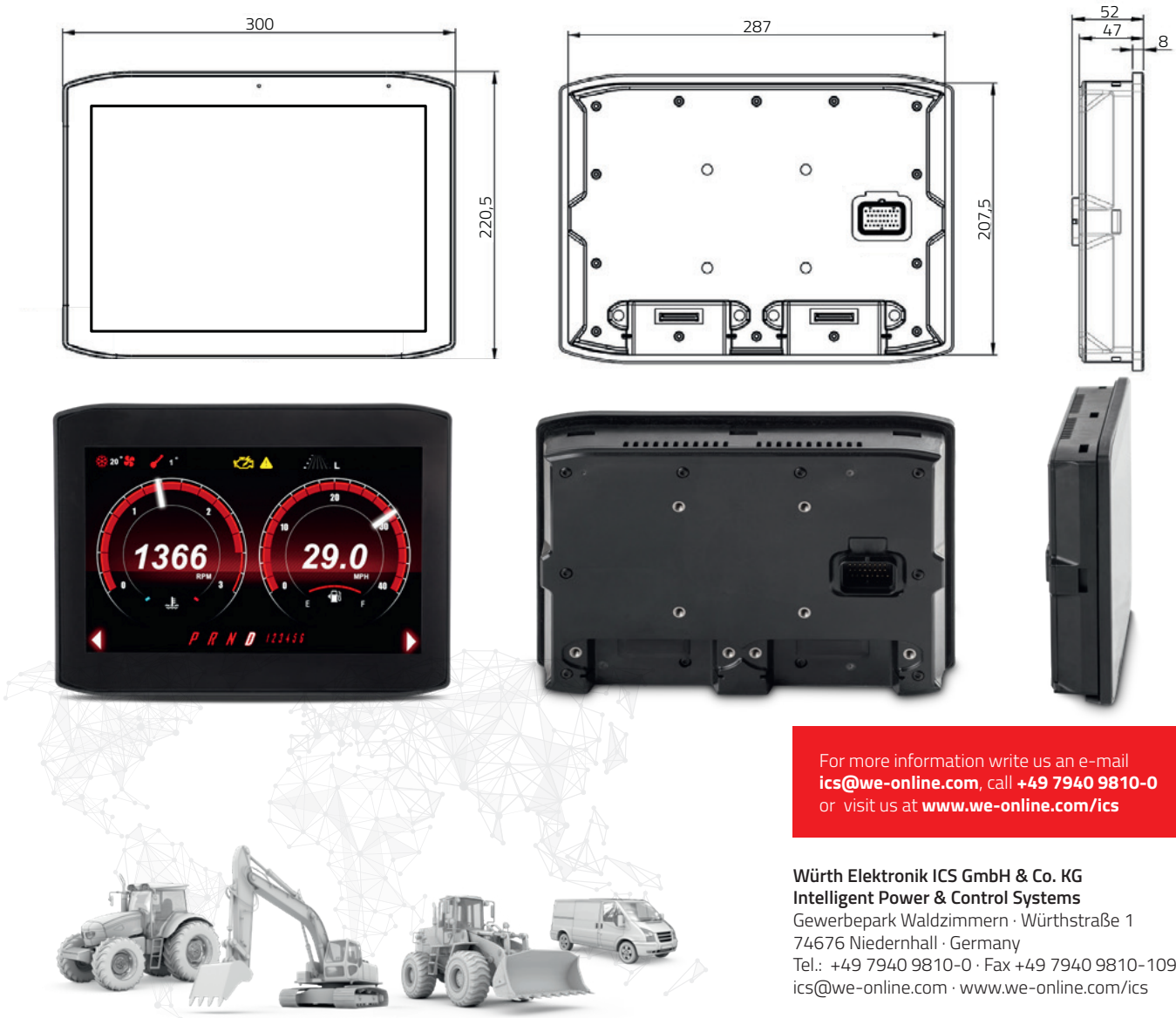
## Qualification

Test methods		
EMC	Automotive	ECE R10
EMC	Earth Moving and Construction Machinery	ISO 13766-1
EMC	Road Vehicles	ISO 13750-2
Electrical loads		EN ISO 14982
Ingress protection	IP66K IP69K (front part) for the version without buttons	ISO 20653
Vibration & Shock		ISO 16750-3
Temperature		ISO 16750-4

## Dimensions & Mounting possibilities

Dimensions	
Front length	300 mm
Front height	220.5 mm
Rear length	287 mm
Rear height	207.5 mm
Width	52 mm

Mounting possibilities		
In-dash mounting		✓
RAM mounting		✗
VESA mounting		✓



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