

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
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	

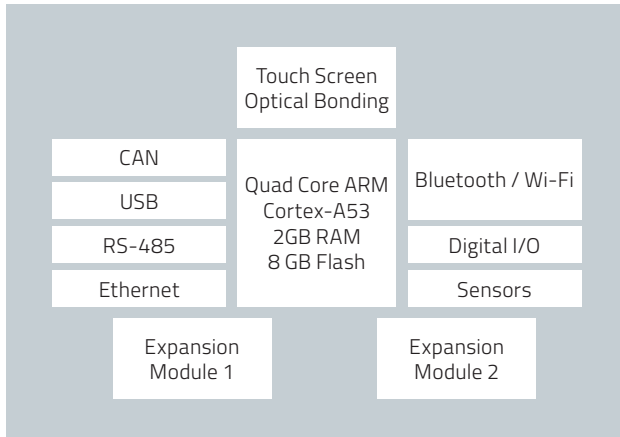
Inputs & Outputs Overview		
4	Digital inputs	High side 0 -24 V
4	Digital outputs	Low side 500 mA at 24 V

Display Specifications	
Display	12.1" TFT LCD 16:9
Resolution	1280 x 800 WVGA 125 PPI
Backlight	LED
Brightness	500 cd/m ²
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

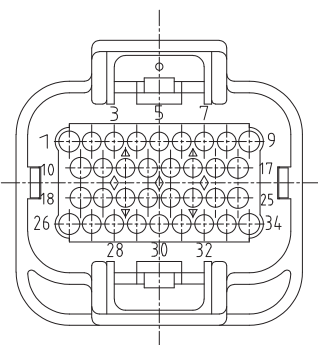


TE Connectivity AMP SUPERSEAL 34 Way Connector
Part No. 4-1437290-0



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

Interface	Pin number	Signal	Description
Power supply	09	VBAT+	Power supply positive
	25	VBAT-	Power supply negative
	17	START KEY	Start key
Ground	34	SHIELD	Shield protection
	01, 12, 16	GND	Ground
CAN 1	21	CAN1_H	CAN 1 High
	30	CAN1_L	CAN 1 Low
CAN 2	20	CAN2_H	CAN 2 High
	29	CAN2_L	CAN 2 Low
Serial RS-485	24	RS485+	RS-485 positive
	33	RS485-	RS-485 negative
Ethernet	05	RX_N	Receive negative
	06	RX_P	Receive positive
	07	TX_N	Transmit negative
	08	TX_P	Transmit positive
USB1	04	USB1 GND	USB 1 Ground
	15	USB1 VBUS	USB 1 +5 VDC
	23	USB1 DM	USB 1 Data minus (via HUB 3)
USB2	32	USB1 DP	USB 1 Data minus (via HUB 3)
	13	USB2 GND	USB 2 Ground
	14	USB2 VBUS	USB +5 VDC
	22	USB2 DM	USB 2 Data minus (via HUB 5)
Digital input	31	USB2 DP	USB 2 Data minus (via HUB 5)
	02	IN1	Digital input 1
Digital output	03	IN2	Digital input 2
	10	IN3	Digital input 3
	11	IN4	Digital input 4
	18	OUT1	Digital output 1
Not connected	19	OUT2	Digital output 2
	27	OUT3	Digital output 3
	28	OUT4	Digital output 4
	26	NC	Reserved NC

Programming environment

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

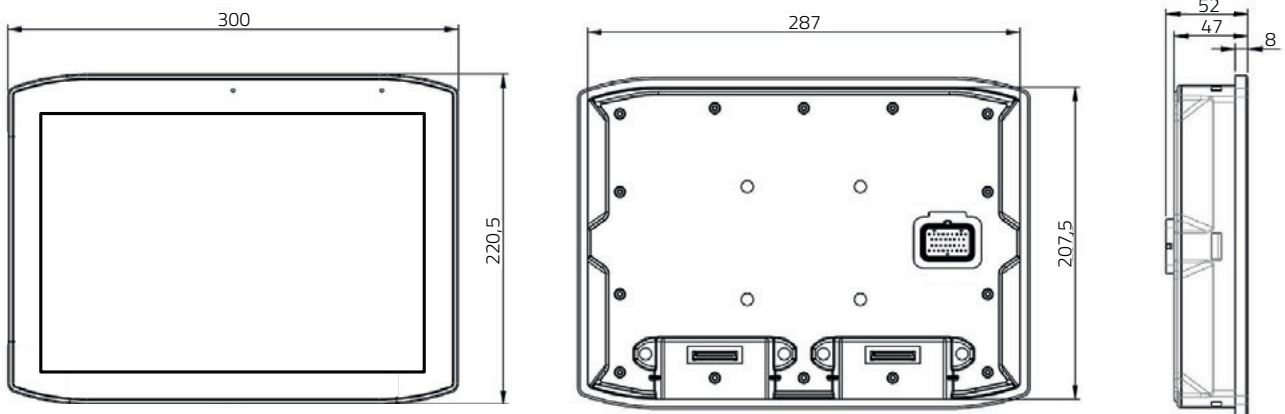
Qualification

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	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	✓



Expansion Module

“Expansion Module” is a plug-in for adding extra functionalities to WEcabin Displays.

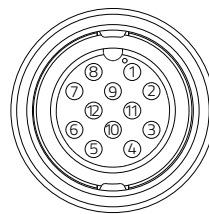
WEcabin Display i12 features two slots at the backside for connecting each one expansion module.



Dual Camera module	
Version	1 - 2 x analogue video input
Connectors	External: 1 x Amphenol 12 pins Internal: 60 pins
Housing	Enforced ABS plastic housing
Dimensions	107 x 40.5 x 27.1 mm
Video/ Camera	Analogue (PAL/NTSC) video input (camera power supply provided)

Pin assignment

Pin number	Signal
01	Camera 1 Input
02	Camera 1 Supply +12 V
03	Camera 2 Input
04	Camera 2 Supply +12 V
09	GND
10	GND



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