

# WE CABIN DISPLAY i7

Intelligent HMI Solutions



**WEcabin Display i7** 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 processing power and memory size
- High optical performance ensures good readability in all lighting conditions
- Optical bonding enhance visibility and reliability
- Optional plug-in expansion modules for additional functionalities and customisation possibility
- Easy to customise for individual design of graphical user interface (GUI) with WEcabin Designer.

**Technical data**

| General information       |  |
|---------------------------|--|
| Processor                 | Dual Core ARM Cortex-A7  |
| RAM                       | 1 GB DDR3  |
| Clock frequency           | 650 MHz  |
| 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        | IP 66<br>IP69K (front part) for the version without buttons              |
| Operating voltage         | 8 V to 32 V DC   |
| Power consumption         | 250 mA at 24 V   |
| Stand-by mode consumption | 2 mA   |
| Housing                   | POLIMID PA6 UV   |
| Connectors                | AMP SUPERSEAL 34 Way connector, 60 pins connectors for Expansion Modules |
| Dimensions max.           | 221.5 x 143.5 x 47 mm  |
| Signaling                 | Internal buzzer (90 dB)  |
| Weight                    | 900 g (without buttons)  |

| 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, 100 mA                                       |
| RS-485 / RS-232 | 1 x up to 150 kBd       |   |
| Wi-Fi           | 802.11n (optional)      |   |
| Bluetooth       | BT4.0 (optional)        |   |

| Inputs & outputs overview |                 |                         |
|---------------------------|-----------------|-------------------------|
| 4                         | Digital inputs  | High side 0 – 24 V      |
| 4                         | Digital outputs | Low side 500 mA at 24 V |

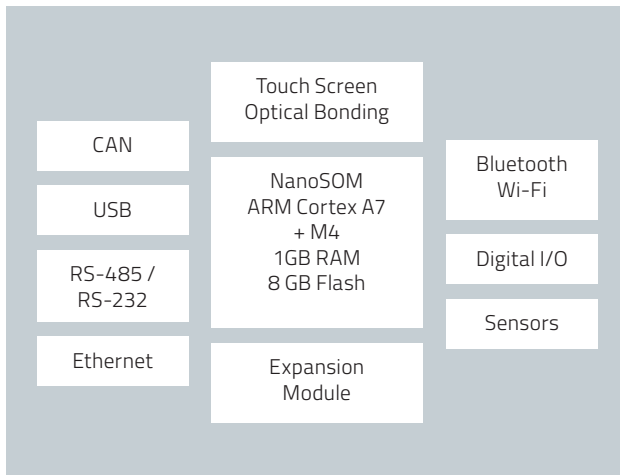
| Display specifications |   |
|------------------------|---|
| Display                | 7" TFT LCD 16:9                         |
| Resolution             | 1024 x 600 WGVA<br>128 PPI              |
| Backlight              | LED                                     |
| Brightness             | 500 cd/m <sup>2</sup>                   |
| ON / OFF LED           | Included                                |
| Orientation            | Landscape or portrait programmable mode |
| Colors                 | 24 bit                                  |
| Contrast ratio         | 600:1                                   |
| Cover glass            | 3.0 mm thickness tempered glass         |
| TFT installation       | Liquid optical bonding                  |

| Physical inputs |   |
|-----------------|---|
| Touch Interface | PCAP multi touch screen                       |
| Buttons         | 2 x 5 silicon soft keys backlitged (optional) |

| Sensors                      |          |
|------------------------------|----------|
| 3-axis digital accelerometer | Optional |
| Temperature sensor           |          |
| Light sensor                 |          |

This item is a standard product, please consider the relevant datasheet notes. The user is responsible for the product's functionality in its purposed system environment.

## Hardware map

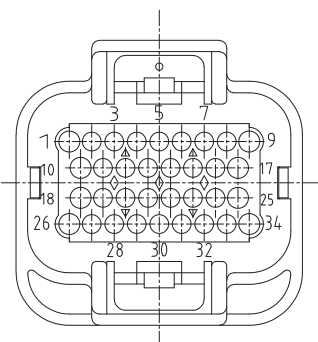


TE Connectivity AMP SUPERSEAL 34 Way Connector  
Part No. 4-1437290-0v



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                   |

## Qualification

| Test methods       |   |  |
|--------------------|---|--|
| EMC                | Automotive  | ECE R10  |
| EMC                | Earth Moving and Construction Machinery                     | ISO 13766-1  |
| EMC                | Agricultural and Forestry Machinery                         | ISO 14982  |
| Vibration & Shock  | -   | EN 60068-2   |
| Ingress protection | IP66K<br>IP69K (front part) for the version without buttons | ISO 20653  |
| Salt spray         | -   | ISO 9227   |
| Temperature        | -   | EN 60068-2   |
| RED                | -   | ETSI EN 301-489<br>ETSI EN 300 328<br>EN 61010<br>EN 62311 |

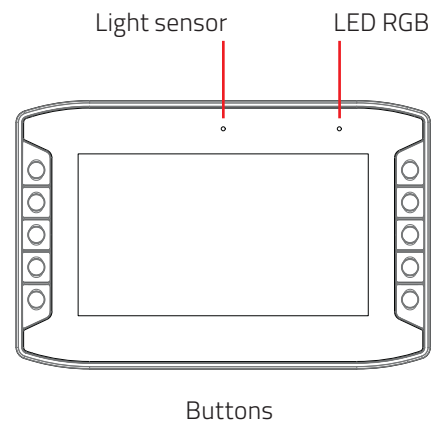
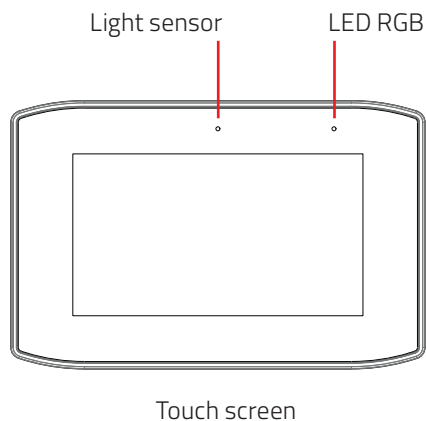
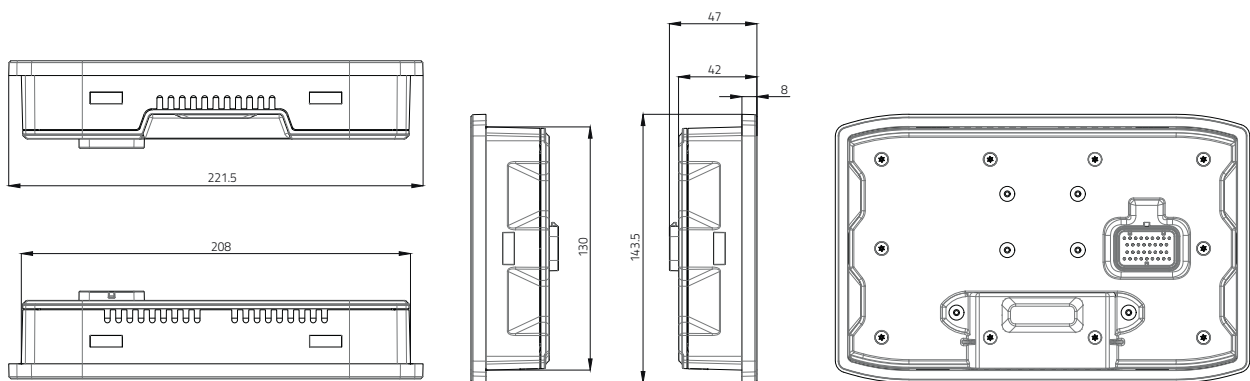
## Programming environment

| Software                |   |
|-------------------------|---|
| Operating system        | Linux Embedded  |
| Application programming | WEcabin Designer<br>CoDeSys™ PLC (optional)<br>QT™ (optional) |

## Dimensions & Mounting possibilities

| Dimensions   |          |
|--------------|----------|
| Front length | 221.5 mm |
| Front height | 143.5 mm |
| Rear length  | 208 mm   |
| Rear height  | 130 mm   |
| Width        | 47 mm    |

| Mounting possibilities |                          |
|------------------------|--------------------------|
| In-dash mounting       | Fixing supports provided |
| Out-dash mounting      | RAM Mount™ (type C)      |



## Available versions

| Versions   | i7 Basic                | i7 Standard             | i7 Plus                 |
|--|-------------------------|-------------------------|-------------------------|
| Processor  | Dual Core ARM Cortex A7 | Dual Core ARM Cortex A7 | Dual Core ARM Cortex A7 |
| Memory   | 1 GB RAM, 8 GB Flash    | 1 GB RAM, 8 GB Flash    | 1 GB RAM, 8 GB Flash    |
| FRAM   | 64 KB                   | 64 KB                   | 64 KB                   |
| Capacitive touch screen  | X                       | ✓                       | ✓                       |
| Optical bonding  | ✓                       | ✓                       | ✓                       |
| 7" Display, 1.024 x 600 (portrait/ landscape), 500 cd/m <sup>2</sup> | ✓                       | ✓                       | ✓                       |
| Light sensor on/off LED  | X                       | ✓                       | ✓                       |
| CAN bus  | 2                       | 2                       | 2                       |
| USB 2.0 port   | 2                       | 2                       | 2                       |
| Ethernet   | ✓                       | ✓                       | ✓                       |
| RS-485 / RS-232  | X                       | X                       | ✓                       |
| 4 x digital inputs   | X                       | ✓                       | ✓                       |
| 4 x digital outputs  | X                       | ✓                       | ✓                       |
| Wi-Fi / Bluetooth  | X                       | X                       | ✓                       |
| Accelerometer, temperature sensor                                    | X                       | X                       | ✓                       |
| Keyboard (2 x 5 buttons)   | ✓                       | Optional                | Optional                |

| Part number | Description              |
|-------------|--------------------------|
| X03440      | i7 Basic with buttons    |
| X03441      | i7 Standard              |
| X03442      | i7 Standard with buttons |
| X03443      | i7 Plus                  |
| X03444      | i7 Plus with buttons     |



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