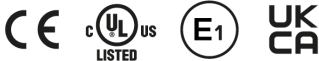
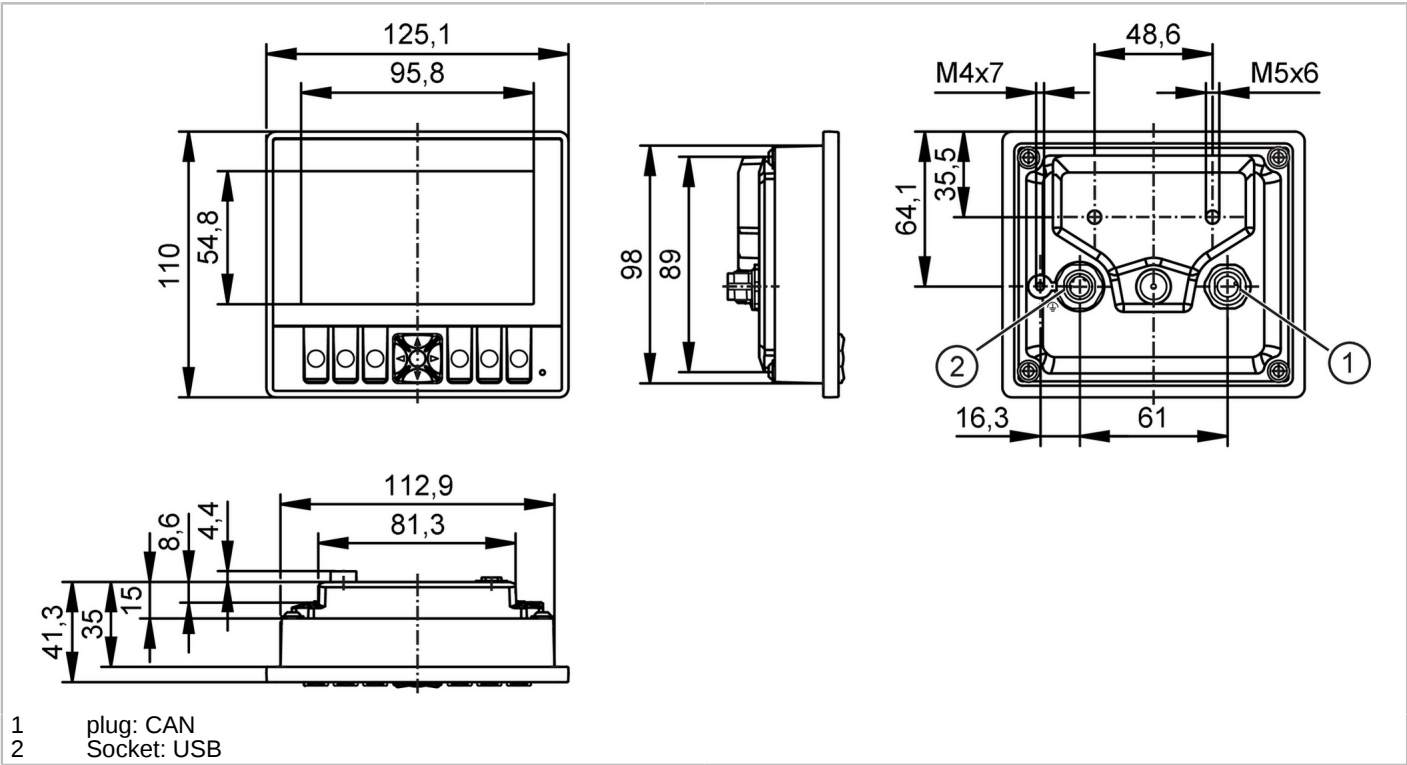


# CR1141



## Programmable Human Machine Interface

ecomatDisplay/4.3"/STD./U



### Product characteristics

|                         |               |                                                 |
|-------------------------|---------------|-------------------------------------------------|
| Communication interface | CAN; USB      |                                                 |
| Operating elements      | 6             | freely programmable backlit function keys       |
|                         | 1             | navigation key with central confirmation button |
| Display type            | Color display |                                                 |

### Application

|             |                                                                                          |
|-------------|------------------------------------------------------------------------------------------|
| Application | for mobile applications; For use in industrial environments; for use in wet environments |
|-------------|------------------------------------------------------------------------------------------|

### Electrical data

|                     |      |                           |
|---------------------|------|---------------------------|
| Operating voltage   | [V]  | 8...32 DC; (to SELV/PELV) |
| Nominal voltage DC  | [V]  | 12 / 24                   |
| Current consumption | [mA] | < 333; (24 V DC)          |
| Power consumption   | [W]  | 8                         |

### Inputs / outputs

|                              |                             |
|------------------------------|-----------------------------|
| Number of inputs and outputs | Number of digital inputs: 1 |
|------------------------------|-----------------------------|

### Inputs

|                          |                                     |
|--------------------------|-------------------------------------|
| Number of digital inputs | 1; (non-configurable service input) |
|--------------------------|-------------------------------------|

### Software / programming

|                             |                 |
|-----------------------------|-----------------|
| Parameter setting options   | CODESYS 3.5; Qt |
| PLC function to IEC 61131-3 | yes             |
| Operating system            | Embedded Linux  |

### Interfaces

|                         |          |
|-------------------------|----------|
| Communication interface | CAN; USB |
|-------------------------|----------|



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|                             |                                                   |                                                               |
|-----------------------------|---------------------------------------------------|---------------------------------------------------------------|
| Number of CAN interfaces    |                                                   | 1                                                             |
| Number of USB interfaces    |                                                   | 1                                                             |
| CAN                         |                                                   |                                                               |
| Transmission rate           |                                                   | 10 kBit/s... 1 MBit/s                                         |
| Protocol                    |                                                   | CANopen; SAE J1939; free protocol                             |
| Profile                     |                                                   | CiA DS 301 Version 4.2; CiA DS 401 Version 1.4                |
| Interface                   |                                                   | CAN Interface 2.0 A/B ISO 11898                               |
| Factory settings            |                                                   | Transmission rate: 250 kBit/s                                 |
| USB                         |                                                   |                                                               |
| Transmission rate           |                                                   | < 480 MBit/s                                                  |
| Version                     |                                                   | 2.0                                                           |
| Operating conditions        |                                                   |                                                               |
| Ambient temperature         | [°C]                                              | -30...65                                                      |
| Note on ambient temperature |                                                   | 2000 m: -30...65 °C                                           |
|                             |                                                   | 3000 m: -30...61 °C                                           |
|                             |                                                   | 4000 m: -30...60 °C                                           |
|                             |                                                   | 5000 m: -30...58 °C                                           |
|                             |                                                   | The mainboard temperature must not exceed 80 °C.              |
|                             |                                                   | for further information please see the operating instructions |
| Storage temperature         | [°C]                                              | -30...85                                                      |
| Max. relative air humidity  | [%]                                               | 90; (non condensing)                                          |
| Max. height above sea level | [m]                                               | 5000                                                          |
| Protection                  |                                                   | IP 65; IP 67                                                  |
| Pollution degree            |                                                   | 2; (before installation and when the device is replaced)      |
| Chemical media              | ISO 16750-5                                       | AA, BA, BD, CC, DB, DC, DD, ED                                |
|                             |                                                   | only one chemical permitted at a time                         |
| Tests / approvals           |                                                   |                                                               |
| EMC                         | UN/ECE-R10 Noise emission and noise interference: | 100 V/m                                                       |
|                             | DIN EN 61000-6-2                                  |                                                               |
|                             | DIN EN 61000-6-4                                  |                                                               |
|                             | DIN EN 13766-1                                    |                                                               |
|                             | ISO 10605 ESD                                     |                                                               |
|                             | noise immunity ISO 11452-1                        |                                                               |
|                             | 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 16750-2 pulse 4                               | severity level 4 / function state A (12 V)                    |
|                             | ISO 16750-2 pulse 4                               | severity level 4 / function state A (24 V)                    |
|                             | ISO 16750-2 pulse 5                               | severity level 3 / function state C (24 V)                    |
|                             | ISO 16750-2 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                           |



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|                      |                                           |                                                                                      |
|----------------------|-------------------------------------------|--------------------------------------------------------------------------------------|
| Vibration resistance | ISO 16750-3 Test VII<br>EN 60068-2-6 sine | random, mounting place car body<br>10...500 Hz / 0.72 mm / 10 g 10 cycles/axis, sine |
| Salt spray test      | EN 60068-2-52 Salt spray                  | severity level 3 / motor vehicle                                                     |
| MTTF [years]         | 112                                       |                                                                                      |
| UL approval          | Ta                                        | -25...60 °C                                                                          |
|                      | Enclosure type                            | Type 1                                                                               |
|                      | voltage supply                            | Limited Energy                                                                       |
|                      | File number UL                            | E205959                                                                              |
| Railway applications | DIN EN 50155 Pkt 12.2                     |                                                                                      |
|                      | EN 50121-3-2                              |                                                                                      |
|                      | EN 55016                                  |                                                                                      |

### Mechanical data

|                             |                                                                                                                                           |                     |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Weight [g]                  | 439.05                                                                                                                                    |                     |
| Type of mounting            | panel/surf.; installation in panels or panel cutouts; (panel cutout: 114 x 99 mm)                                                         |                     |
| Dimensions [mm]             | 125.1 x 110 x 41.3                                                                                                                        |                     |
| Material                    | housing: diecast aluminium powder-coated; Display: glass anti-reflective and hardened; rear of the housing: plastics; diaphragm: Gore-Tex |                     |
| Information on service life | Pushbuttons:                                                                                                                              | 750000 Betätigungen |
|                             | Navigation key with pushbutton:                                                                                                           | 750000 Betätigungen |
|                             | Display LED lifetime:                                                                                                                     | > 50000 h           |

### Displays / operating elements

|                                 |                                                 |                                                 |
|---------------------------------|-------------------------------------------------|-------------------------------------------------|
| Display                         | Status LED                                      | 1 LED, multi-color freely programmable          |
| Operating elements              | 6                                               | freely programmable backlit function keys       |
|                                 | 1                                               | navigation key with central confirmation button |
| Display resolution              | 800 x 480                                       |                                                 |
| Display type                    | Color display                                   |                                                 |
| Display size                    | 4.3"                                            |                                                 |
| 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                  | 800:1                                           |                                                 |

### Hardware

|                     |                              |  |
|---------------------|------------------------------|--|
| Processor           | ARM Dual Core 64 Bit 1,4 GHz |  |
| Working memory      | 1 GByte RAM                  |  |
| Mass storage        | 4 GByte Flash                |  |
| Non-volatile memory | 8 kByte                      |  |

### Data memory

|                 |                            |  |
|-----------------|----------------------------|--|
| Real-time clock | yes; UTC, battery buffered |  |
|-----------------|----------------------------|--|

### Remarks

|               |        |  |
|---------------|--------|--|
| Pack quantity | 1 pcs. |  |
|---------------|--------|--|

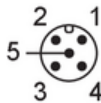


Programmable Human Machine Interface

ecomatDisplay/4.3"/STD./U

Electrical connection - CAN

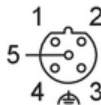
Connector: 1 x M12; coding: A; Contacts: 5



- 1: Service
- 2: VBB30
- 3: GND
- 4: CAN\_H
- 5: CAN\_L

Electrical connection - USB

Connector: 1 x M12; coding: B; Contacts: 5



- 1: + 5 V DC
- 2: - Data
- 3: + Data
- 4: ID
- 5: GND
- SCREEN: FE screen connected to plug