VEETHREE
TECHNOLOGIES

PRODUCT PREVIEW

# R3RT

## 2.8” Round IPS TFT CAN Bus Display with capacitive touchscreen




## Key Features:

- 2.8” IPS TFT
- 480 x 480px resolution
- 1000 NIT backlight
- Projected Capacitive (PCAP) touchscreen
- IP66 / IP68 all round
- Up to 4 Analogue Input (0-10V, 0-5000 Ohm, 0-28mA)
- Up to 8 Digital Inputs (5V - 32V DC)
- 4 Digital Outputs, capable of sourcing or sinking up to 500 mA, and up to 10 KHz PWM
- Frequency (tachometer) input +/- 3V to +/- 60V, capable of measuring 4 Hz to 50 KHz
- Ignition input can be used for system wake up from low power mode
- 1 Isolated CAN 2.0
- 1 CAN FD
- 100 Mbit/s Ethernet
- Real Time Clock with battery backup*
- Low Power Standby
- Supports Secure Boot
- Fast Boot Time - *starts up in <3 seconds*
- Single-tone buzzer
- **Mounting options include:**
  - Surface Mount
  - RAM Mount
  - Flush Mount (optional bracket)

***Backup battery** is removable and replaceable the R3RT complies with the EU Battery Regulation (EU) 2023/1542.*




**R3RT – 2.8” IPS TFT CAN BUS DISPLAY WITH CAPACITIVE TOUCHSCREEN.**

**The R3RT continues the line of new rugged display solutions from Veethree. The 2.8" high bright colour display is a compact unit with capacitive touch. On-board light sensor automatically adjusts brightness according to surroundings.**

Suitable for a wide range of applications with communication options of 2 x CAN (1 x CAN FD capable and 1 x CAN isolated), RS485 and Ethernet. On-board I/O includes analogue / digital inputs and digital outputs.

With ARMcortex-M7 Microcontroller (clock speed 492MHz) the R3RT can achieve fast boot times (starts up in less than 3 seconds) and can be used in low power applications, and also supports Secure Boot supporting CRA compliance. The OS running the R3RT is Zephyr, a real-time operating system (RTOS) and the development environment includes a custom docker container which is integrated with VSCode for Windows 11 or Linux Host.

Graphics support is provided through the LVGL version included with Zephyr RTOS. Future enhancements to the development environment will include the legacy SDKC migration path and the integration of Codesys.

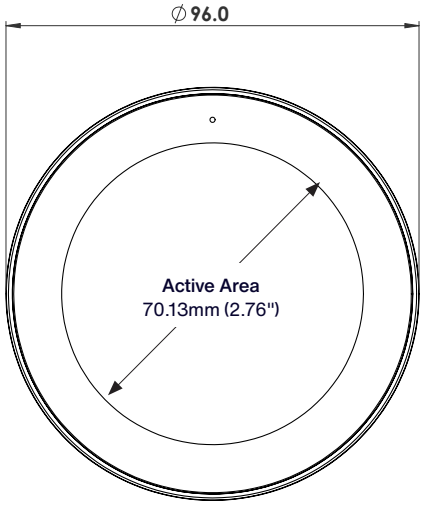
The fully bonded LCD provides outstanding viewability in all conditions including direct sunlight. The ruggedised unit is sealed to meet IP66/68 standards – suited to the harshest of environments.

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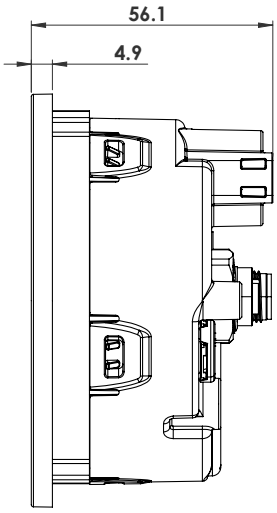
## Specifications

***Please note:*** *The product description and technical specifications are subject to change prior to the official launch of the R3RT.*

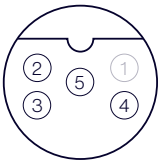
FRONT




SIDE




**CAN2** (NMEA2000®)

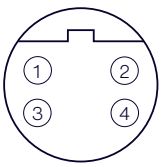



**M12-5 Pin (Male)**

**Pin Number:**

**1:** No connection
**2:** Isolated power +
**3:** Isolated power -
**4:** Isolated CAN High
**5:** Isolated CAN Low

**Ethernet**




**M12 D-Code**

**Pin Number:**

**1: TX+** (White /Orange)
**2: RX+** (White/Green)
**3: TX-** (Orange)
**4: RX-** (Green)

| Electrical | |
|---|---|
| Display | 2.8" IPS TFT |
| Resolution | 480 x 480px |
| Active Area | 70mm diameter |
| Viewing Angle | All round |
| Contrast Ratio | 800:1 |
| Brightness | 1000 NIT (cd/m²) Full sunlight readable |
| Power Requirements | 9-32V DC nominal supply voltage |
| Sounder | Internal buzzer |
| Connection | x1 18 pin Deutsch - DT16 18SA-K004<br>x1 M12 isolated CAN / x1 M12 Ethernet |
| Communications | x1 CAN 2.0 / x1 CAN FD / x1 RS485 /<br>x1 USB Type C (USB2.0) / x1 100 Mbit/s Ethernet |

| Environmental | |
|---|---|
| Operating Temperature | -30°C to +80°C |
| Storage Temperature | -30°C to +80°C |
| Glass Impact Rating | IK06 |
| Degree of Protection | IP66 / 68 |

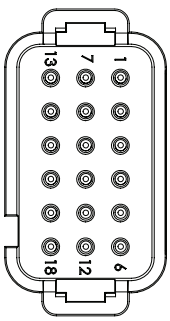
| Mechanical | |
|---|---|
| Case Material | PC / ABS |
| Case Colour | Black / Anthracite Grey |
| Dimensions | Ø 96mm 56.1mm deep (screen thickness 4.9mm) |
| Fitting Kit | x2 Nylon 6-6 Nut (white) / x2 Nylon 6-6 Stud (white)<br>x1 Circular brace for mounting display (optional) |

| OS and Software | |
|---|---|
| Development Environment | Custom Docker Container integrated with VSCode for Windows 11 or Linux Host. |
| Target OS | Zephyr |
| Graphics Library | LVGL |
| **COMING SOON!** | SDKC Migration path and integration of Codesys |

| Inputs / Outputs | |
|---|---|
| Analogue Input | Up to 4 x 0-10V, 0-5000 Ohms, 0-28 mA |
| Digital Inputs | Up to x8 digital inputs |
| Digital Output | Up to x4 digital outputs sourcing or sinking up to 500mA |
| Frequency Input | x1 frequency input +/- 3V to +/- 60V, capable of measuring 4 Hz to 50 KHz |

**Pin In / Out descriptions**

Deutsch Connector




Pin Descriptions

| | |
|---|---|
| 1. GROUND | 10. ANALOGUE IN 3 / DIGITAL IN 7 |
| 2. +POWER | 11. ANALOGUE IN 4 / DIGITAL IN 8 |
| 3. DIGITAL OUT 1 / DIGITAL IN 1 | 12. WAKE UP INPUT |
| 4. DIGITAL OUT 2 / DIGITAL IN 2 | 13. GROUND |
| 5. DIGITAL OUT 3 / DIGITAL IN 3 | 14. TACH IN |
| 6. DIGITAL OUT 4 / DIGITAL IN 4 | 15. RS485A |
| 7. GROUND | 16. RS485B |
| 8. ANALOGUE IN 1 / DIGITAL IN 5 | 17. CAN1 LOW |
| 9. ANALOGUE IN 2 / DIGITAL IN 6 | 18. CAN1 HIGH |

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