

# WMT part tor

tor – terminal for on-site and remote operations  
**Interfaces, cloud connection, data centre**



*Teleservice module ESX®-TC3G*



# Flexible telemetry and data acquisition solutions – developed for use in mobile applications.

## Fields of use

- Continuous recording of machine data
- Short-term use for sporadic errors
- Online access for troubleshooting, maintenance and updates
- Display of machine data via web interface
- Accompaniment of prototypes and new developments
- Predictive maintenance
- Cloud connectivity

## Variants

**tor** is available in various expansion stages to cover the requirements of a wide range of application scenarios.

From the device, which is equipped as Starter only with the software of the device manufacturer STW, up to a fully equipped Complete variant with which all needs of a modern telemetry solution can be covered.

The functional scope of **tor** created by us is made available via kits and comprises the following variants.

| Kit          | Starter | Base | Data | Complete |
|--------------|---------|------|------|----------|
| StarterKit   | ✓       | ✓    | ✓    | ✓        |
| BaseKit      | ✗       | ✓    | ✓    | ✗        |
| Advanced-Kit | ✗       | ✗    | ✗    | ✓        |
| DataKit      | ✗       | ✗    | ✓    | ✓        |
| ServiceKit   | ✗       | ✗    | ✗    | ✓        |
| DevKit       | ?       | ?    | ?    | ?        |

*The following additional option can be selected for each variant: machines.insight (STW)*

## tor – Kits with modules

All **tor** functionalities are implemented in modules, which come in the following kits. A module always represents a summary of programs (apps) and data that are required for a field of application. Details on the field of application and the functionality of a module can be found on its page.

### Starter-Kit

#### Module: connect.cloud

Connection to **machines.cloud**. A cloud solution from STW for display of machine data.

#### Module: ui.web.stw

The **ui.web.stw module** (=machines.insight; formerly known as VDS) is a web-based configuration interface with which many relevant system parameters can be set and data output. It provides mechanisms to read and process data from the CAN bus. This further processing can take place, for example, in a “Cockpit”, so that CAN data can be visualised directly to the user in graphs, scales and status displays.

Another possibility is to set up a “LogJob”, which automatically records the data and prepares

them for further processing. The module is also used to set up all required “LogJobs” that are used for the data point model of the connect.cloud module.

#### Module: gateway.codesys

The **gateway.codesys module** is available for CODESYS 3.X and CoDeSys 2.3 and, after activation, provides a service with which the CODESYS programming environment (CODESYS-IDE) is able to access a control unit via the device. This process represents a simple illustration for the developer, as if he were directly on site.

The connection to the control unit is not established directly with the workstation, but

with the **gateway.codesys module**. Here an Ethernet, CAN or RS232 connection can exist between the devices. The **gateway.codesys module** is then largely connected to the

workstation via, for example, Ethernet, WLAN or PPPoE. This makes it possible, for example, to access a workstation from a remote location via the Internet (via VPN), on-site via CAN, and then the desired control unit.

## tor – Kits with modules

### BaseKit

#### Module: ctrl.cmd

The **ctrl.cmd module** constitutes an interface with which defined tasks in the system can be implemented and information retrieved. For example, it receives instructions to start and stop other systems, changes system values, e.g. the PIN code for the SIM card used, and provides information on current system statuses.

**Base:** Functions can only be triggered from the **tor** web interface.

### AdvancedKit

#### Module: ctrl.cmd

The **ctrl.cmd module** constitutes an interface with which defined tasks in the system can be implemented and information retrieved. For example, it receives instructions to start and stop other systems, changes system values, e.g. the PIN code for the SIM card used, and provides information on current system statuses.

**Base:** Functions can only be triggered from the **tor** web interface.

**Advanced:** Functions can also be triggered via CAN and USB.

#### Module: ui.web

The **ui.web module** is an extension to the functionality of the **ui.web.stw module**, but which is more about module configuration than system configuration. This web-based solution provides access to all configurable **tor** modules and sends information back to them.

**Base:** Position determination, input of machine information and PIN

**Advanced:** Input of network settings, CAN settings

## tor – Kits with modules

### DataKit

#### Module: **can.recorder**

The **can.recorder module** is an extensively configurable instrument for collecting raw data via CAN according to adjustable criteria.

The following configurations can be made:

- Recording of CAN 1 and/or CAN 2
- Filtering of CAN messages
- Storage interval of individual messages
- Memory space
- Ongoing storage and ring storage
- Trigger event
  - Memory full
  - Trigger via CAN

Four **can.recorders** can be operated in parallel. This allows data to be collected for various purposes.

The data of the individual devices are transferred to a WMT server via an encrypted connection and can be downloaded there by the customer.

#### Module: **data.sync**

The **data.sync module** is used to transport data automatically from the device per configurable trigger or manually via the **ui.cmd module**. A further mechanism allows data to be transported into the device. Here the type of data is not specified. For example, recorded data from the **can.recorder module** can be sent by the device or control unit updates and user manuals sent to the device.

### ServiceKit

#### Module: **can.dialog**

With the help of the **can.dialog module**, CAN messages can be sent to the CAN bus of the machine via tor. The possible applications are not limited, so that it can be used to “flash” control units and to parametrise CAN nodes by SDO protocol or for customer-specific applications.

## Technical data

| Teleservice module ESX®-TC3G |   |
|------------------------------|---|
| NAND flash memory            | 1 GByte   |
| Power supply                 | 9 ... 32 V DC   |
| Optional interfaces          | 1 digitaler Eingang<br>1 digitaler Ausgang                                      |
| Acceleration sensor          |   |
| Dimensions                   | Internal antenna:<br>Approx. 134 mm x 117 mm x 36 mm<br>(5.28" x 4.61" x 1.42") |
|                              | External antenna:<br>183 mm x 117 mm x 36 mm<br>(7.21" x 4.61" x 1.42")         |
| Operating temperature        | Operating: -30°C ... +60°C (-22°F ... +140°F)<br>Housing temperature            |
| 3G / 2G modem                | Five-Band 3G- HSPA+<br>Quad-Band 2G- GPRS/EDGE                                  |

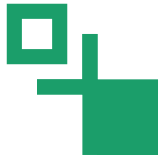
|                   |  |
|-------------------|--|
| GPS & GLONASS     | GLONASS & GPS simultaneously<br>1 ... 10Hz update rate<br>33 tracking channels<br>SBAS (WAAS, EGNOS, MSAS, GAGAN, QZSS)<br>support of improved location accuracy |
| Wi-Fi / Bluetooth | 1 IEEE802.11 a/b/g/n<br>2.4 & 5GHz<br>Access point and infrastructural mode<br>Bluetooth V2.1+EDR<br>BLE (Bluetooth Low Energy)<br>Power Class 1.5               |
| CAN               | CAN 2.0B (11bit and 29bit Identifier)<br>Low-/High-Speed up to 1Mbit/s   |
| RS232             | Serial interface with programmable baud rate   |
| Ethernet          | IEEE 802.3, 10 / 100Mbit/s   |
| USB               | USB 1.0  |

## WMT SOLUTIONS in the fields:



### SYSTEMS

Fully configurable and ready-to-install complete systems



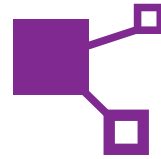
### COMPONENTS

Hardware based solutions, preconfigured and tested



### SUPPORT

Flexible solutions on-site and remote



### CONNECTIVITY

Interfaces for external systems – remote and local

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