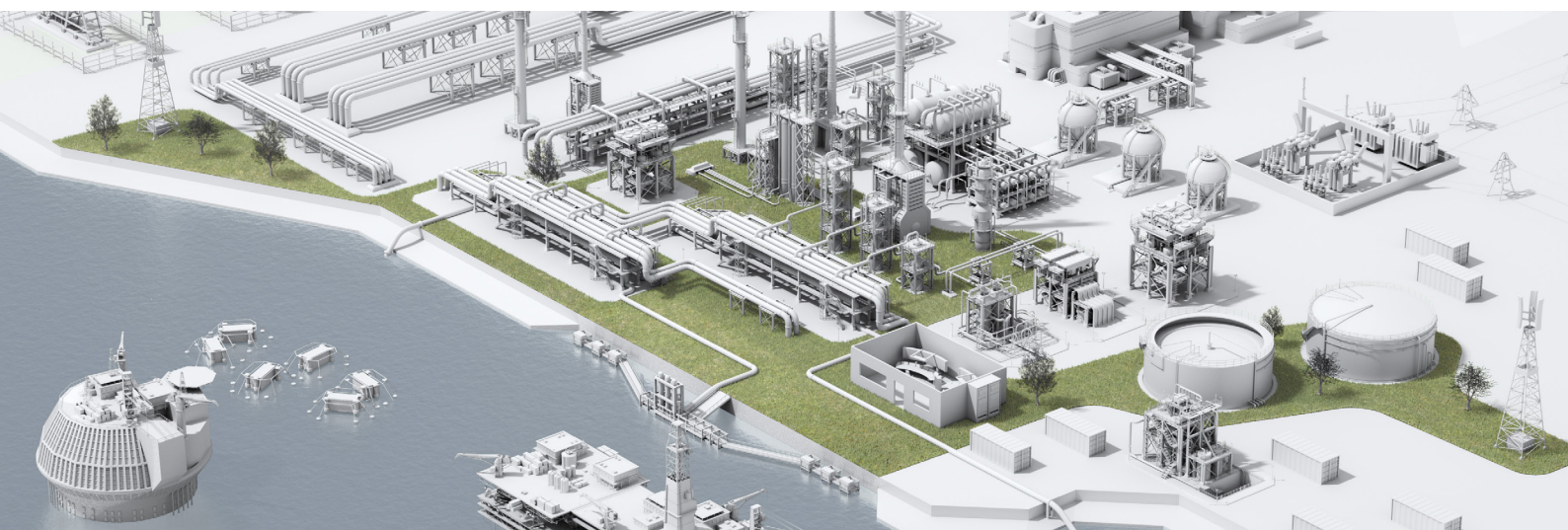


# Terminal Management System

## T-MAC Plus – Access Control Leaflet



Safety and security have become increasingly important elements in oil & gas industry. The burden of complying with constant evolving regulations means an economic and time cost as it implies the need to adapt both internal and external procedures for the companies. T-MAC Plus, the solution of ABB for Terminal Management System, provides a modular and flexible software that gives a solution to these major challenge.

The Access Control module of T-MAC Plus performs the necessary checks to allow the entry or exit of plant for drivers, trucks and also monitoring access of rail wagons and barges. These checks can be configured according to the requirements of each customer without modifying the application software.

The modular solution T-MAC Plus provides the tools to make access control in both the entrance and exit of the installation a simple task in a complete automatic way.

The Access Control module allows the installation to be adapted to the needs that may arise for new security requirements and new regulations. It also allows the integration of any needed hardware to easily identify vehicles and people accessing to the terminal. This hardware can be originated by different suppliers or different types to suit perfectly to the functionality required by each customer.

To increase access security, the identification of drivers and personnel may be achieved using Terminal Insight App (developed by ABB as part of the digitalization concept of terminals) or by card readers (magnetic cards, bar code, etc.). Alternatively, it can be performed by biometric identification devices. In case that such devices are not available, the identification can be done by introducing data in the system through the application web forms.

Vehicles entering the plant can be identified using Terminal Insight App (developed by ABB as part of the digitalization concept of terminals), by a plate recognition system or by RFID readers detecting the tags installed in the vehicle (truck or trailer). As an alternative, vehicles can be identified by cards.

T-MAC Plus provides a large library of protocols to communicate with field devices used in Access control tasks.

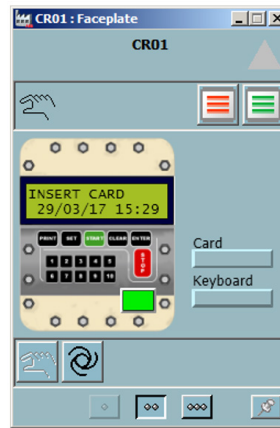
Faceplate of a card reader in T-MAC Plus application

Vehicles form in T-MAC Plus application



#### Available communication protocols:

- AMC card reader
- SPEC card reader
- HELIOS card reader
- Stahl MT120 display
- Vision 230 display device
- Goennheimer TA-125 text display
- HID badge reader
- Siemens RFID Reader
- SPEC RFID Reader
- Iris Access 2200 scanner
- Magtek card reader
- Nedap microwave tag and badge scanners



#### Checks

The list of possible checks varies from plant to plant depending on their own security procedures and national regulations. Nevertheless customer can modify this list by configuring the module to include the necessary checks.

Example of possible checks:

1. The driver is in the Terminal Management System database
2. The driver license is not expired
3. The license to transport dangerous goods is not expired
4. The vehicle (both the truck and the trailer) is in the Terminal Management System database
5. The insurance of the vehicle is not expired
6. The vehicle and the driver are allowed to enter the terminal (they are not in a black list)

In case any of the checks are not met, T-MAC Plus Access Control module generates an alarm that will be shown to the operator in control room and to the driver through the reader display.

The module is multilingual so all messages will be shown in the language configured for the driver.

Registration number	Unit Tag	Unit Type	Comments	Vehicle	Trailer	Uncoupled Weight	Max Load
1122	1112000	Truck		W-1122000-TMP-2016w-8-2T-AMC Plus Reader	8042	6000	
1113	1113000	Truck	Truck #1	T-MAC Plus Reader	8042	6000	
1144	1114001	Truck		W-1144001-TMP-2016w-8-2T-AMC Plus Reader	8042	6000	
1155	1115001	Truck		W-1155001-TMP-2016w-8-2T-AMC Plus Reader	8042	6000	

Compartment	CompartmentTag	Max Volume	Max Volume	Capacity	Free Buffer	Bottom Loading Supported	Tag List
1	1	15000	1	14500			
1	2	15000	1	14500			
1	3	15000	1	14500			
1	4	15000	1	14500			

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