ifm electronic

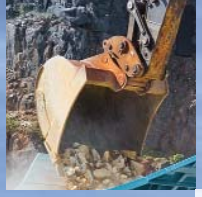




ecomat mobile

Systems for mobile machines

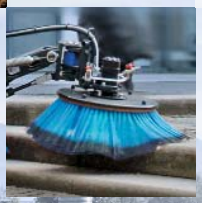
www.ifm.com/gb/mobile



Construction machines

Agriculture and forestry

Transport and logistics



Municipal vehicles

In your element

The name ifm electronic stands for a wide range of different sensors and systems for automation technology. For forty years the family-run company has been researching, developing and producing with the aim of optimising technical processes and conserving resources.

With industry and application know-how, ifm electronic – one of the leading manufacturers of automation technology – successfully provides system solutions that are both innovative and economical.
A range of more than 7,800 articles ensures the flexibility required to meet the customers' demands: from an individual sensor, matching accessories to a complete system solution.

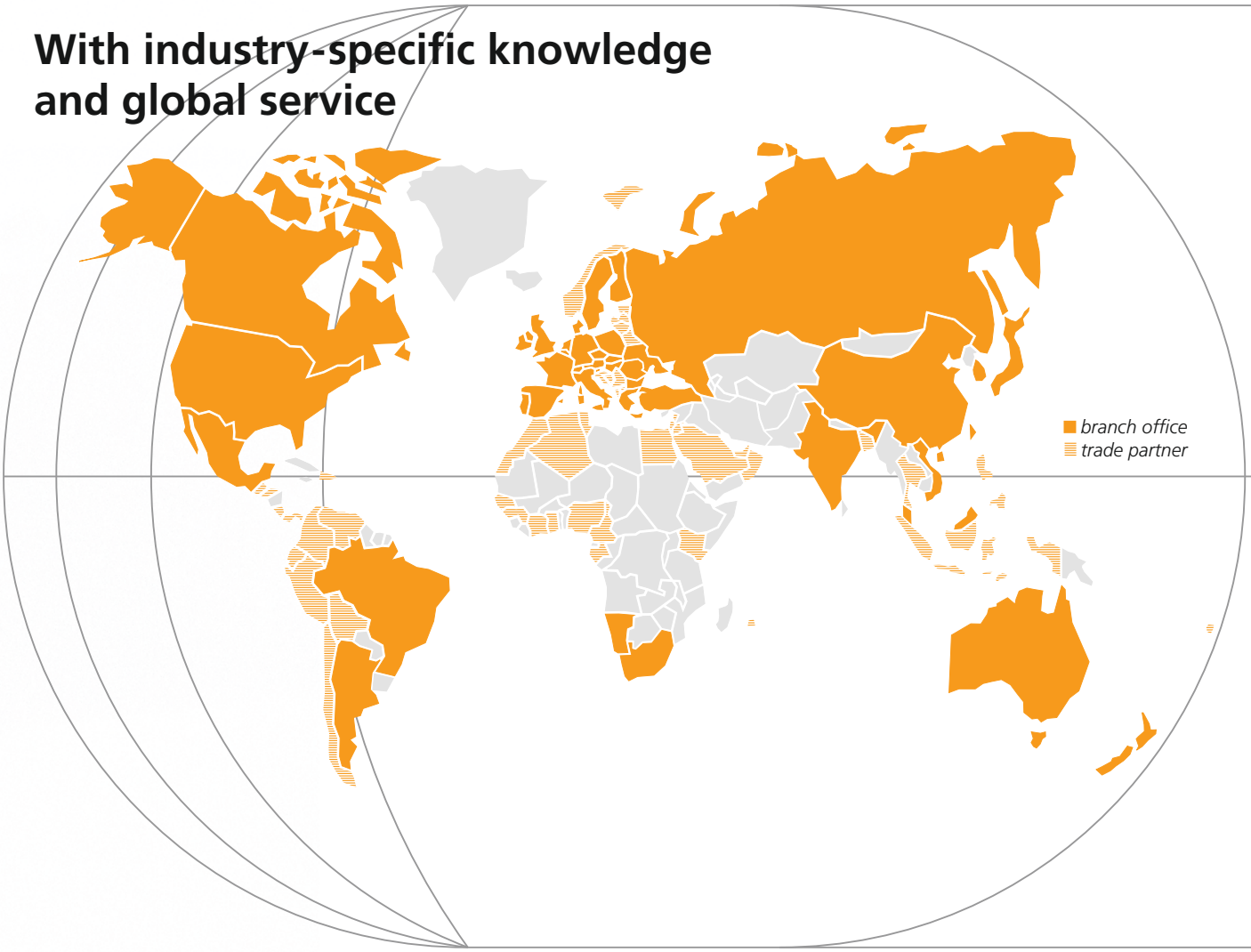
Simply scan the QR code and watch the video showing the ifm ecomatic overview.
www.ifm.com/gb/ecovideo

Systems for mobile machines

With over 40 years of experience in sensors and control systems we know about the special requirements for mobile machinery: heat, cold, moisture, dust and vibrations – maximum reliability even under extreme conditions. In addition, practical solutions for operation, communication and remote maintenance. The result: high uptime of the machines. The world's leading manufacturers for mobile machinery rely on solutions from ifm electronic – in over 70 countries worldwide. ifm electronic – close to you!

ecomat mobile

With industry-specific knowledge and global service



The ifm group of companies is present in over 70 countries with more than 5,000 employees and looks after more than 100,000 customers from the various industries. We take being close to the customer very seriously: service visits in the event of questions or requests, support for installation or set-up have become a standard for us. Your satisfaction drives us on.

ifm electronic – a reliable partner for implementing your projects.

ecomat*mobile* used in construction machines

Sensors and controllers used in muddy and wet conditions

We do not worry when leaving them out in the rain. Water, permanent condensation or dirt are no problem for our systems for mobile applications. The special mechanical design of the housing and a reliable sealing concept prevent the penetration of moisture.
Suitable connectors and connection cables ensure that protection rating IP 69K does not end at the housing connections. Benefit from the many years of application know-how from ifm electronic for your construction machine!

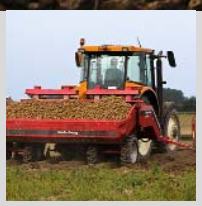
In muddy and wet conditions

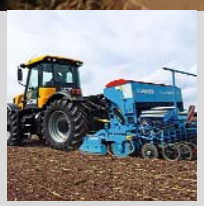
For shocks and vibrations

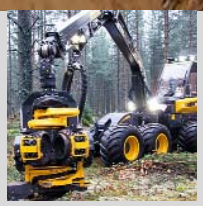
Sensors and controllers for shocks and vibrations

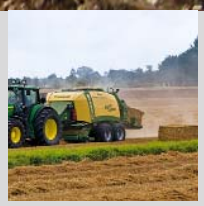
Where the going gets tough, the material is exposed to permanent vibrations or extreme impact. This is why our sensors for mobile applications are fully potted. Connectors are protected against unintended loosening by a special vibration protection. The mechanical design of controllers and modules is especially rated for permanent shock and vibration. Whether on the field or in the forest: no challenge can be too hard for our systems.

ecomat*mobile* used in agricultural and forestry machines









Municipal vehicles

Sensors and controllers in snowy and icy conditions

That leaves us cold: extreme weather conditions with iciness or blazing heat are no problem for our systems for mobile applications. Their wide temperature range allows use in all climatic zones. All sensors and controllers must prove their resistance in cyclical temperature shock tests before leaving production. Resistant housing materials ensure that salt deposits, as they may arise during the winter when gritters are used, do not affect the product.

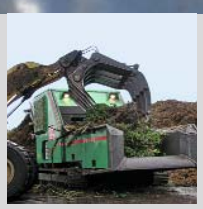
ecomat*mobile* used in municipal vehicles

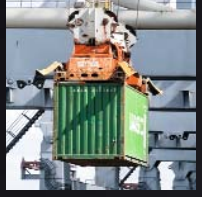
In snowy and icy conditions











With thunder and lightning

Sensors and controllers with thunder and lightning

Even if high voltage is in the air: our sensors and control systems are not impressed. The complex electronics is protected against electro-magnetic interference as detailed EMC tests have shown. Conducted interference is reliably filtered out and cannot affect the controllers. This ensures that the data exchange via the CAN interfaces functions reliably even under most adverse conditions such as in outdoor applications of transport and logistics.

ecomat*mobile* used in transport and logistics

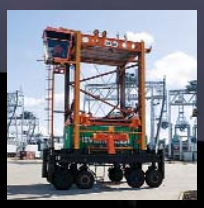


photo source: Kai Tholen / pixelio.de

Systems for mobile machines

Encoder type RM

Robust multi-turn encoder for position detection in harsh applications with automatic work functions.

Dialogue modules PDM360 NG

7.0" TFT graphic display for operation, visualisation and parameter setting of the functions of the vehicle.

CabinetModule

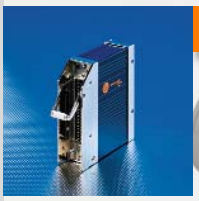
Decentralised CANopen I/O module for detecting digital and analogue signals in the cockpit or the operating panel.

ClassicController R360

Powerful 32-bit mobile controller for the complex work functions in a wheeled excavator.

SmartController R360

Powerful mobile controller for automotive drive control and communication with the engine controller in a wheeled excavator.



Inductive sensor type IIM

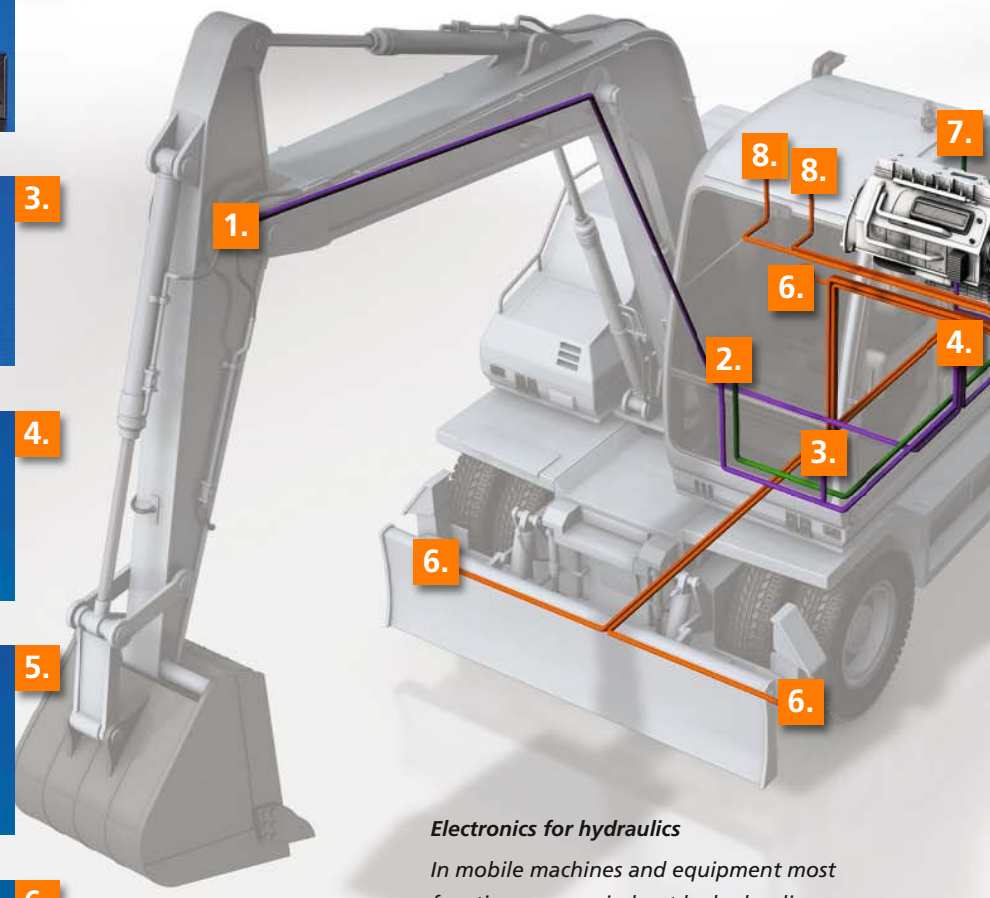
Inductive sensor in M30 design for mobile applications for position detection at the outrigger.

Camera system type O2M

Network camera for rear monitoring in a wheeled excavator. Visualisation via the cockpit display.

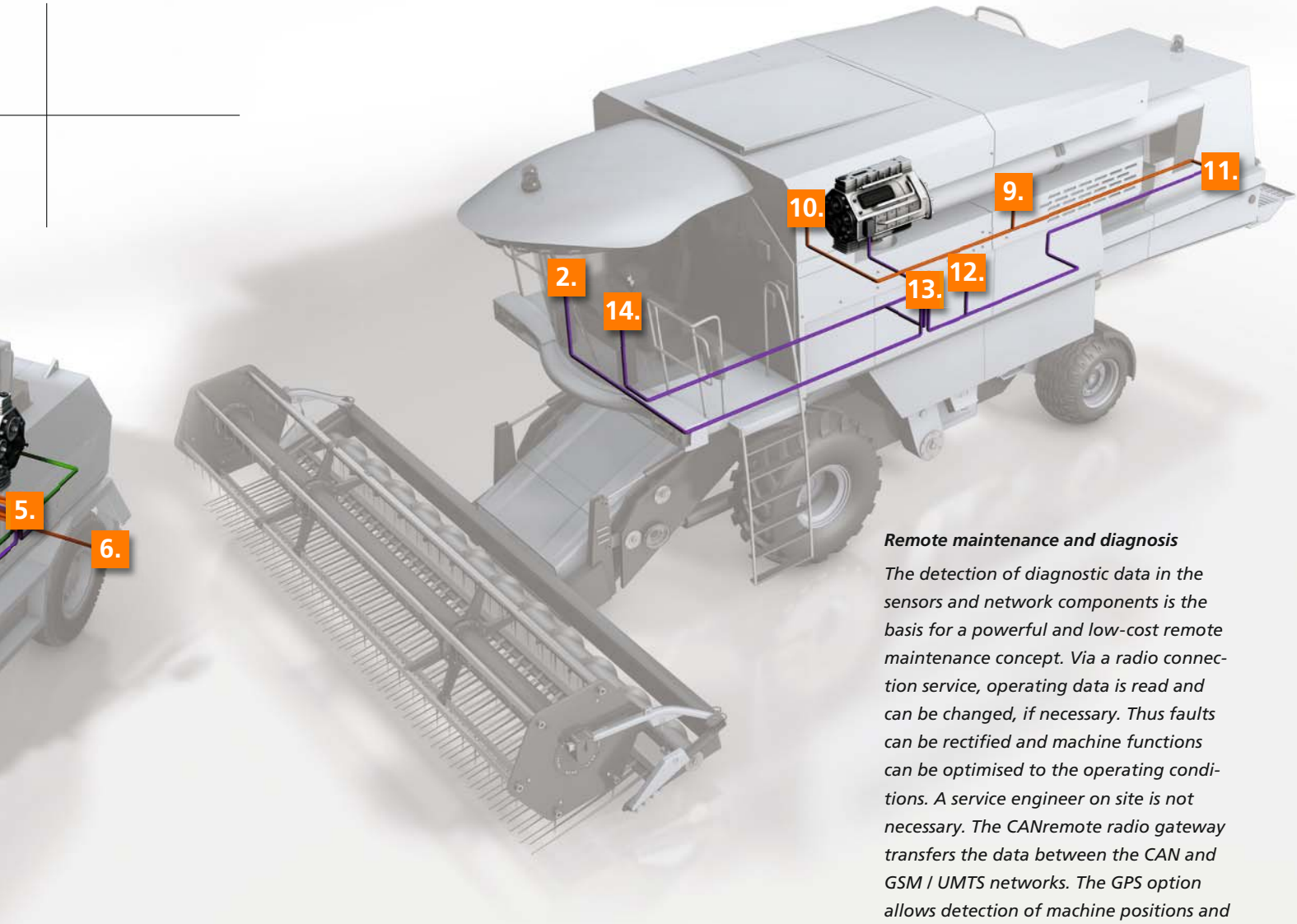
Temperature sensor type TA

Compact 6 mm temperature transmitter for oil temperature detection in the hydraulic system.



Electronics for hydraulics

In mobile machines and equipment most functions are carried out by hydraulic systems. In the meantime electronic control of the valves and pumps has become a standard in modern machines.
ifm's ecomatmobile system provides current-controlled PWM outputs and optimised control functions for the power outputs. This leads to a manufacturer-independent interface between hydraulics and electronics.



Remote maintenance and diagnosis

The detection of diagnostic data in the sensors and network components is the basis for a powerful and low-cost remote maintenance concept. Via a radio connection service, operating data is read and can be changed, if necessary. Thus faults can be rectified and machine functions can be optimised to the operating conditions. A service engineer on site is not necessary. The CANremote radio gateway transfers the data between the CAN and GSM / UMTS networks. The GPS option allows detection of machine positions and implementation of position-dependent functions (e.g. tracking, precision farming).

9.

Pressure sensor type PA

Compact and robust pressure transmitter for detecting the operating pressure in the hydraulic system.

10.

Temperature sensor type TS

Compact and robust Pt100 screw-in sensor for measuring the gearbox temperature. The measuring probe is screwed directly into the gearbox housing.

11.

CompactModule

Decentralised CANopen I/O module for reading the process signals and triggering the actuators in a combine harvester.

12.

CANremote

Web-based wireless data exchange for remote diagnosis, visualisation and agricultural comfort functions.

13.

ClassicController R360

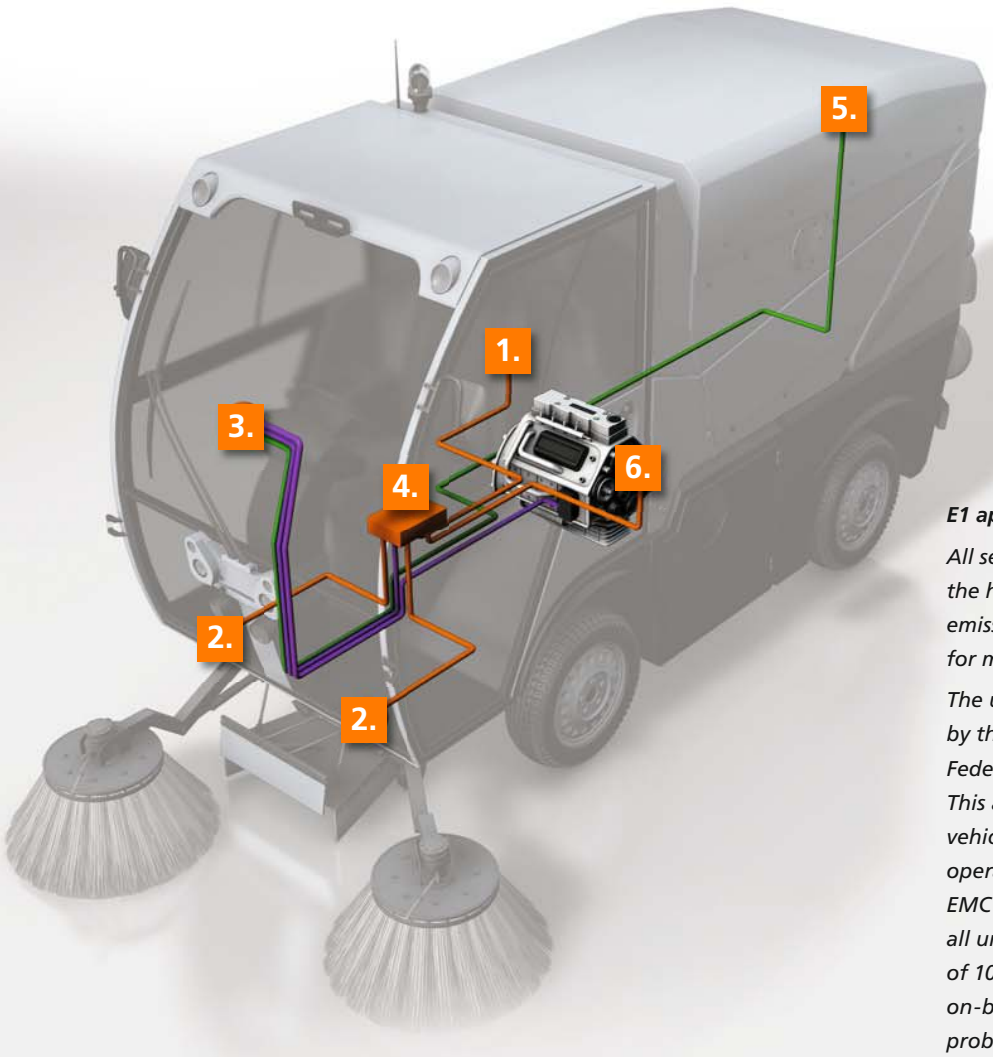
Powerful 32-bit mobile controller for the complex work functions, the automotive drive control and communication with the engine controller in a combine harvester.

14.

BasicDisplay

The high-resolution colour display and the visualisation concept replace the conventional panel meters in a combine harvester.

Systems for mobile machines



E1 approval and highest EMC resistance

All sensors and control components meet the high electrical requirements for noise emission and immunity for components for mobile use.

The units also have the e1 type approval by the Kraftfahrt-Bundesamt (German Federal Motor Transport Authority). This allows installation of the units on vehicles without invalidating their operating permit. Beyond the required EMC limit value of the e1 type approval all units have an increased EMC resistance of 100 V/m and withstand pulses from the on-board vehicle supply system without problems.

1.

Inductive sensor type IGM

Inductive sensor in M18 design for mobile applications for position monitoring of the waste container lock.

2.

Inductive sensor type IGM

Inductive sensor in M18 design for mobile applications for position monitoring of the circular brushes.

3.

Dialogue module PDM360 NG

7.0" TFT graphic display for operation, visualisation and parameter setting of the functions of the vehicle.

4.

Mini controller BasicController

A simple, modular and cost-optimised mini controller to ensure the work and drive functions in a compact sweeper vehicle.

5.

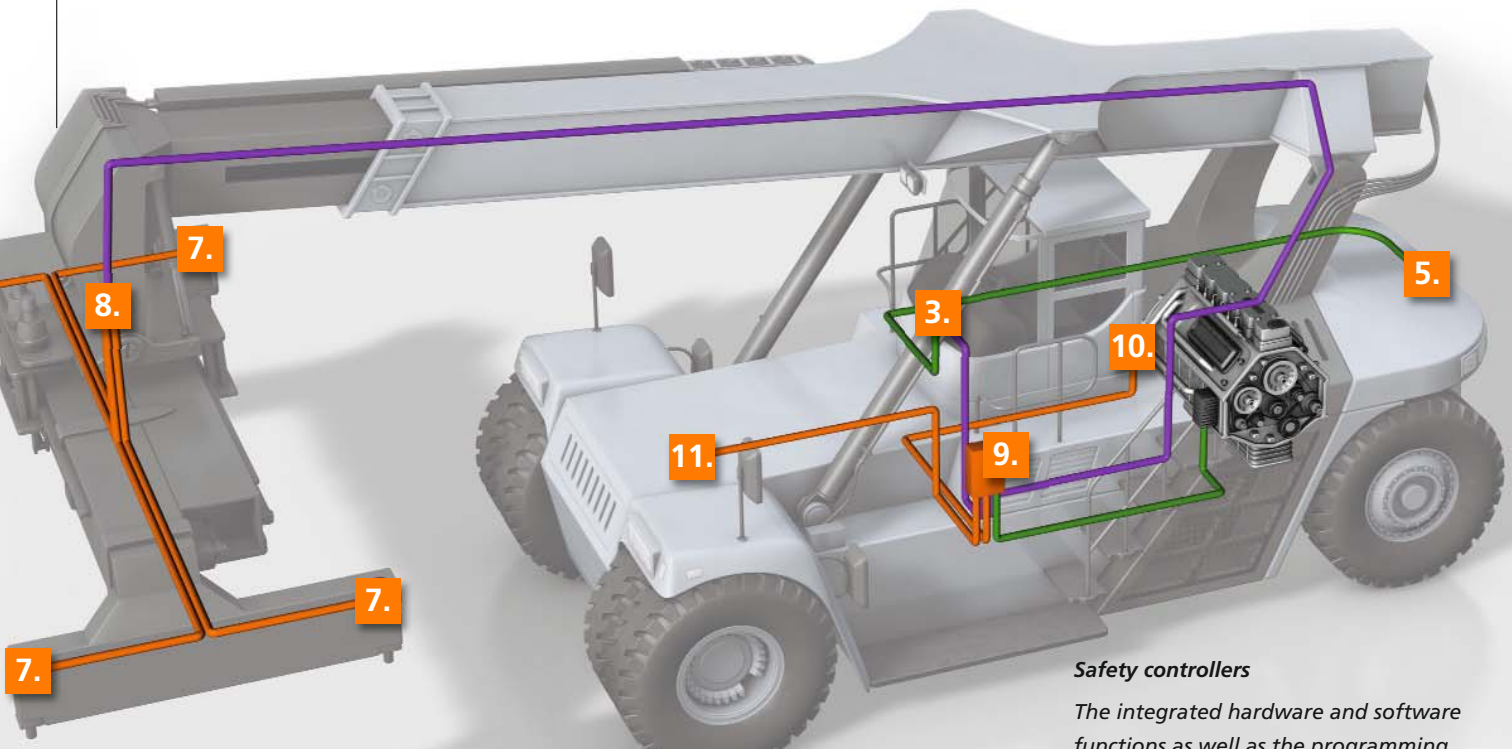
Camera system type O2M

Network camera for rear monitoring in vehicles. Indications and visualisations on the cockpit display.

6.

Pressure sensor type PA

Compact and robust pressure transmitter for level detection in the industrial water tank.



Safety controllers

The integrated hardware and software functions as well as the programming according to IEC61131 are the basis for the use of ecomatmobile components in applications up to PL d (EN ISO 13849-1) or SILcl 2 (IEC 62061).

The CANsafety extension allows the safe exchange of safety-critical data between bus participants e.g. two safety controllers on the same bus cable, parallel to the "normal" communication.

7.

Inductive sensor type IIM

M30 sensor for mobile applications for position monitoring of the twistlocks in the spreader of the reach stacker.

8.

CompactModule

Decentralised CANopen I/O module for reading the position sensor signals of a spreader. The reduced wiring complexity increases the uptime of the reach stacker.

9.

SafetyController R360

Powerful 32-bit safety controller for the complex work functions, the automotive drive control and communication with the engine controller of a reach stacker.

10.

Temperature sensor type TS

Compact and robust Pt100 bolt-on sensor for measuring the gearbox temperature. The measuring probe is screwed directly into the gearbox housing.

11.

Pressure sensor type PA

Compact and robust pressure transmitter for detecting the operating pressure in the hydraulic system.

Above-average quality creates reliability

All ifm units have to prove their reliability in extensive tests. Common product tests are enhanced and completed by combined tests such as temperature shock and vibration tests as well as special leak tests, e.g. using high-pressure water jets. Among others, these test procedures lead to protection rating IP 69K that all sensors and connectors for mobile applications have. Before the ifm products go to the customer they are all submitted to a 100 % final inspection.

Only these measures allow ifm to guarantee the quality and reliability they promise the customer.

Sensors and controllers of the highest quality and reliability

Solutions of maximum quality and reliability – that is what the customers expect from ifm electronic. In addition to the quality management according to ISO 9001 all ifm systems are developed and certified according to applicable standards for use in mobile vehicles. ifm also offers control systems for safety-related applications complying with EN ISO 13849-1 and IEC 62061.

IP 69K test

A high-pressure water jet with 100 bar pressure at 80 °C is aimed at the object from short distance and at standardised angles. Only units remaining ingress-resistant over a defined time obtain protection rating IP 69K.

Shaker

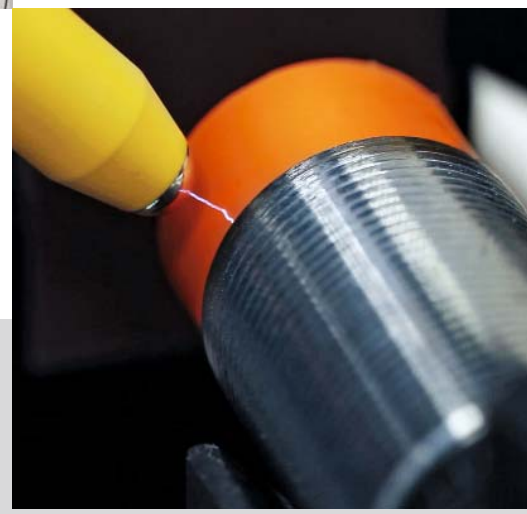
Vibration and shock tests simulate the rough operating conditions which are no problem for the ifm components for mobile applications.

Climate laboratory

Simulation of different climatic zones. Among others the switch-on behaviour of the ecomatmobile components is tested at extreme temperatures.

EMC test

Electric discharge, high voltage and electromagnetic fields: ecomatmobile products are protected against noise pulses by the housing. The electronics on the inside are protected.



Tried-and-tested for daily use

ecomatmobile in a fire engine: The PDM dialogue module visualises the state of the fire water pump system.

Robust in a stone crusher: The PDM dialogue module as display and operating unit.

Safe lifting: Inductive ifm sensors monitor if the container is safely locked in the spreader.

ifm as soil stabiliser: I/O modules are used for a decentralised connection of sensors and actuators. They communicate with the controller via CANopen.

The most important element of the crane: On the one hand the mobile controller ecomatmobile R360 evaluates sensor and adjustment signals and on the other, controls the different drive systems.

In the street and on rail: In the 2-way vehicle a pressure sensor for mobile applications monitors the air brake system.

Logging vehicle with loader: ecomatmobile controller controls vehicle and application.

Visit our website:

www.ifm.com

Over 70 locations worldwide –
at a glance at **www.ifm.com**

ifm electronic gmbh
Friedrichstraße 1
45128 Essen
Tel. +49 / 201 / 24 22-0
Fax +49 / 201 / 24 22-1200
E-mail info@ifm.com

ifm electronic – close to you!

Overview
ifm product range:

Position sensors

Sensors for motion control

Industrial imaging

Safety technology

Process sensors

Industrial communication

Identification systems

Condition monitoring systems

Systems for mobile machines

Connection technology

Accessories

ifm article no. 7511535 · We reserve the right to make technical alterations without prior notice. · Printed in Germany on non-chlorine bleached paper. 02/13