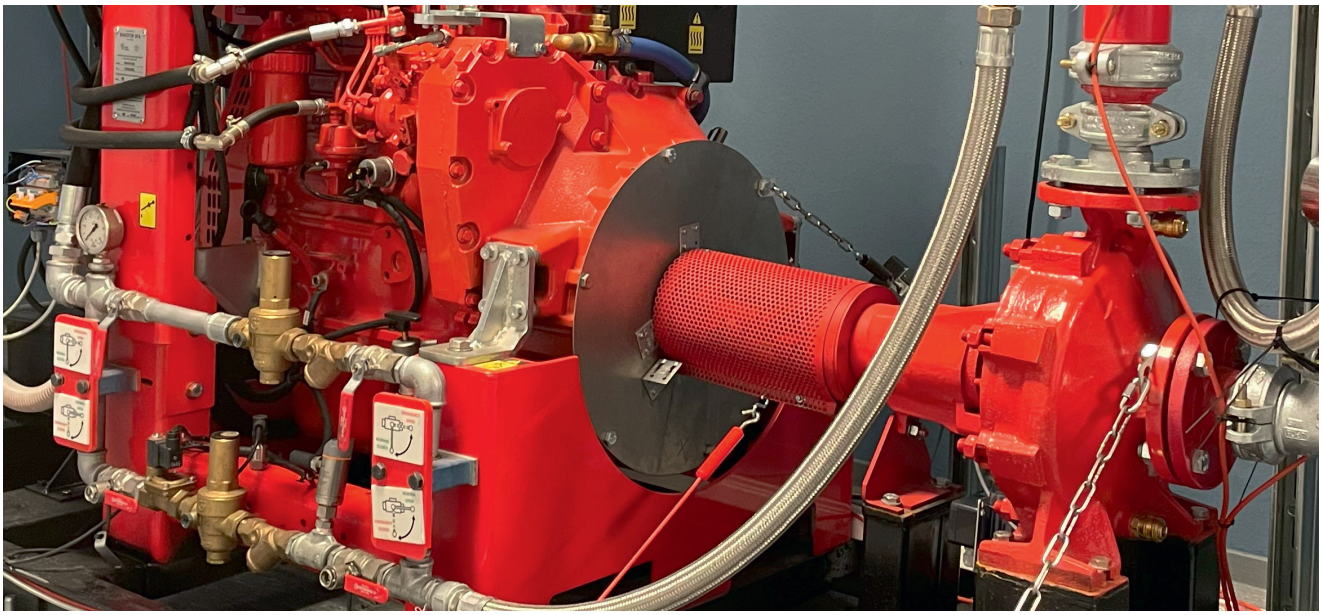
MECON
SAFETY CONTROL

FACTS

Fully Automatic Churn Testing System - Automated system for testing and monitoring fire pumps



With the Fully Automatic Churn Testing System (FACTS), you gain an innovative solution that fully automates the required routine tests of fire pumps, minimizing the need for manual intervention.

FACTS is the world's first system of its kind to be approved by FM Approvals according to Standard 1330 and additional requirements, as well as proved by VdS. It provides a safe and reliable solution for testing and monitoring fire pumps.

The system is distinguished by automated testing procedures, enhanced safety measures, efficient monitoring through various sensors, as well as cybersecurity and reliability.

FM APPROVED
PROVE POWERED BY VdS
made in Germany
KAGEMA

ADVANTAGES

- Significant reduction in personnel effort through automated processes
- Automatic generation of comprehensive test reports
- Minimized risk to operators by eliminating manual interventions
- Reduced frequency of physical tests and inspections

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KEY FEATURES AND FUNCTIONALITIES

System

Automated testing procedures	» Fully automated weekly and monthly churn tests » Real-time recording and analysis of key parameters such as vibration, pressure, and temperature » Automatic termination of tests in case of anomalies or issues to prevent damage » Documentation of alarms » Safe test shutdown in the event of fire or power failure
Enhanced safety measures	» Prevention of risks to personnel in the pump room through motion sensors and warnings » Protection against damage to the pump and fire suppression system during tests » Continuous operational readiness of the water-based extinguishing system, supported by redundant safety features (even in the event of simultaneous fire and automatic testing)
Efficient monitoring	» Sensors for oil level, water flow, pressure, temperature, vibration, and valve position » Automatic alerts for deviations, such as pump room flooding or insufficient cooling water flow
Cybersecurity and reliability	» Minimized cyber risks through separate CPU and HMI functionalities » Secure operation via protected communication protocols and strict access controls
Certificates	» FM PR465838 » VdS WAL00001

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TECHNICAL DATA

FACTS Cabinet

Approved for use with sensors and actuators.
Redundant safety feature to prevent interference with the pump unit in case of fire protection water demand.

Mounting	Wall-mounted
Display	7“ WVGA operator display, touch screen
Modules	I/O and PLC (Programmable Logic Controller)
Alarm	Audible alarm (buzzer) and visual indicator (indicating light)
Nominal power supply	Power buffer module 230 V, 50 Hz, or 110 V, 60 Hz, 285 VA
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP66
Electromagnetic compatibility (Test report No: EMC01 48467-309P24)	Complies with EN 55011:2016-04, EN 55011/A1:2017-04, EN 55011/A11:2020-03, EN 55011/A2:2021-04

Motion sensor for occupational safety

Note: Supply power of 24V DC is common for the components.

Mounting	Wall-mounted
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP54

Supply pressure sensor

Mounting	T-piece at the supply pressure gauge
Connection	¼“ external thread
Pressure limits	0 ... 25 bar (0 ... 363 psi)
Measurement accuracy	±5% of full scale over a temperature range of 10 °C ... 40 °C (50 °F ... 104 °F). Note: Accuracy may vary outside this temperature range.
Signal output	4 ... 20 mA
Cable connector	Included
Protection class	IP65

Room temperature sensor

Mounting	Wall-mounted
Connection	2-wire
Protection class	IP54

Vibration sensor

RMS Vibration acceleration measurement

Mounting	M8 x 5.5 at the frame or engine block
Connection	M12 cable connector
Material	Stainless steel
Signal output	4 ... 20 mA, 2-wire
Protection class	IP68

Optical occupational safety indicators

Two yellow flashing beacons for internal and external warning.

Mounting	Wall-mounted
Nominal power supply	24 V DC
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP54

Acoustic occupational safety indicator

Buzzer for additional internal warning.

Mounting	Wall-mounted
Nominal power supply	24 V DC
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP54

Circulation relief valve

FACTS monitors circulation relief valve operation. Approved pressure-activated water flow switch (alarm pressure switch).

Mounting	Switch to be connected to the bypass pipe with circulation relief valve (1“ or ¾“).
Connection	Potential-free contact (2 changeober contacts)

Oil level sensor

Adjustable. Not required if the diesel engine is fitted with an oil level alarm switch.

Mounting	Floor mounting kit included (excluding dowels and screws)
Reed contact switching capacity	5 W
Tube	Flexible, 1 m length, ½“ diameter, without connection to the oil drain plug
Protection class	IP65

Packing gland sensor

Alarm threshold typically set to 3 drops per second … 250 ml per minute (measurement time approx. 30 s). For longer intervals, 1 … 2 drops per second is possible.

Mounting	Drip pan below the stuffing box
Connection	½“ external thread
Nominal power supply	24 V DC
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP54

Guard switch

The guard fixing of the shaft is important to minimise occupational risk and prevent damage to the driver shaft and/or pump coupling. Pumps without coupling guards (e.g., vertical shaft turbine, close-coupled electric motor, vertical in-line) do not require a sensor.

Scope of delivery	Safety switch, rope including fixings, floor mounting kit
Mounting	Floor mounting kit included (excluding dowels and screws)
Nominal power supply	24 V DC
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP67

Level switch for pump room / pan flooding

Mounting	Wall-mounted
Contact rating	Max. 50 VA
Nominal power supply	24 V DC
Accuracy	6 mm
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	Housing: IP54 Switch: IP68

Suction pressure sensors

For connection to public water supplies or sprinkler tanks. For public water supplies, see supply pressure sensor details.

Mounting	T-piece at the suction pressure gauge
Connection	¼“ external thread
Pressure limits	Public water supplies: 0 ... 25 bar (0 ... 363 psi)
	Sprinkler tanks: -1 ... 1.5 bar (-14.5 ... 22 psi)
Measurement accuracy	±5 % of full scale over a temperature range of 10 °C ... 40 °C (50 °F ... 104 °F). Note: Accuracy may vary outside this temperature range.
Signal Output	4 ... 20 mA
Cable connector	Included
Protection class	IP65

Stop function

Failsafe. Redundant configuration. Prepared for reset and redundancy monitoring.

Mounting	Mounting kit for stand installation included (excluding dowels and screws)
Nominal power supply	24 V DC
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Protection class	IP66

Position sensor

The optional FM approved position sensor detects movement of the pump, driver, or pump unit indicating loose fixings or misalignment.

Mounting	Floor mounting kit included (excluding dowels and screws)
Nominal power supply	24 V DC
Operating temperature	4 °C ... 50 °C (39 °F ... 122 °F)
Measurement of possible movement between driver, pump, or floor	±0.5 mm
Protection class	IP66

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PRODUCT AND ACCESSORIES

Product	Order code
FACTS - Fully Automatic Churn Testing System Diesel engine package	FACTS0-DB0
FACTS - Fully Automatic Churn Testing System Diesel engine package with oil level sensor	FACTS0-DB1
FACTS - Fully Automatic Churn Testing System Diesel engine package with circulation relief valve	FACTS0-DC0
FACTS - Fully Automatic Churn Testing System Diesel engine package with circulation relief valve and oil level sensor	FACTS0-DC1
FACTS - Fully Automatic Churn Testing System Electro engine package with circulation relief valve	FACTS0-EC0
FACTS - Position sensor	FACTS0-AA0000AA1
FACTS - Stop function for installation in existing systems (Retrofit)	FACTS0-AA0000AR
FACTS - Suction pressure sensor public water supply	FACTS0-AA0000P
FACTS - Suction pressure sensor sprinkler tank	FACTS0-AA0000T
FACTS - Level switch	FACTS0-AA0001
FACTS - Level switch 2 pieces	FACTS0-AA0002
FACTS - Guard switch	FACTS0-AA001
FACTS - Packing gland sensor	FACTS0-AA01
FACTS - Packing gland sensor 2 pieces	FACTS0-AA02
FACTS - Oil level sensor	FACTS0-DA1