

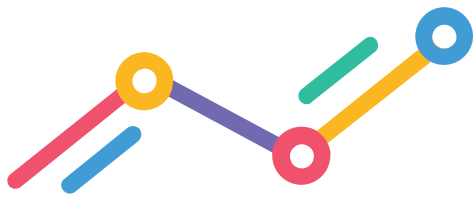
Introducing

THE FUTURE OF CONDITION MONITORING



TrackSense

Powered by MRD Rail Technologies

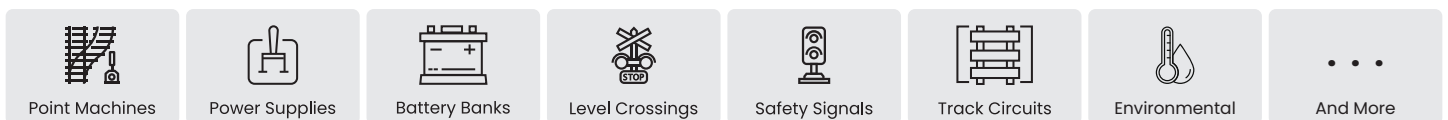


tracksense

TrackSense represents the next generation of remote condition monitoring, combining modular expansion units with industry-standard sensors and a powerful cloud server for seamless data storage and analysis. Designed for affordability and reliability, TrackSense offers a practical solution for asset maintenance management you can depend on.

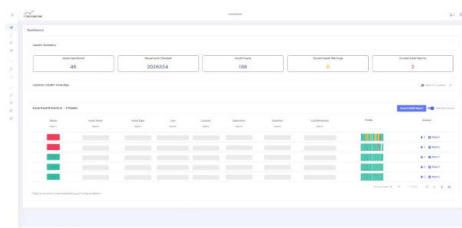
TrackSense Modular Hardware

TrackSense is designed with your organisation in mind. Unlike expensive, rigid systems, it offers an affordable, modular solution compatible with off-the-shelf sensors, letting you choose the tools that best meet your needs. The DIN-mounted backbone design allows easy, cost-effective expansion, upgrades, and module replacement, future-proofing your investment. TrackSense provides lasting value and support long after purchase. It can monitor key performance data for any rail asset, including:



TrackSense Cloud Platform

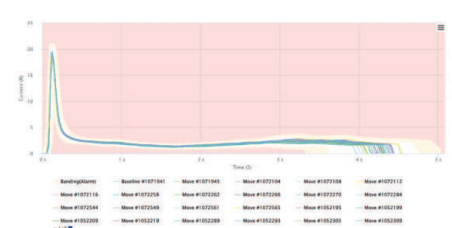
TrackSense enables real-time monitoring and predictive analysis of your network's assets from anywhere, offering flexible options for cloud or local processing and protection of your data with encryption and user credentials. You can streamline your workflow by integrating alerts into your existing maintenance platform, and daily email reports provide a comprehensive overview of your entire system, ensuring you always stay informed and in control.



TrackSense Cloud gives you oversight of your system's health/performance from anywhere



Asset trend view for predictive alerts and monitoring gradual performance degradation



View and compare individual movement's signatures for analytics, alerts and fault finding



TrackSense

Condition Monitoring

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Logger Module (TS-LOG)

The central module of each TrackSense system, providing power to and collecting data from all connected modules via the DIN-rail backbone connector. It buffers data through power or network outages, uploading to the cloud when available, and provides RS-485 connectivity for third-party Modbus sensors.

General Data

Dimensions (W x H x D)	22.6 × 113.7 × 99mm
Weight	< 100g
Operating Temperature	-25 to 70°C
Mounting	35mm DIN Rail, IEC60715
Enclosure Material	PA
IP Rating (Enclosure)	IP20
Flammability Rating (Enclosure)	UL 94 V-0
Climate Categories to IEC60721	Storage - 1K4 Transport - 2K3 Stationary Use - 3K5

Screw Terminals

Wire Size	24 AWG
Stripping Length	7mm
Tightening Torque	0.5Nm

Power

Supply Voltage	20-28V (24VDC)
Supply Current	85mA (24V)

Data

Storage Capacity	16GB SD Card
Ethernet	RJ-45, 10 Mbit/s or 100 Mbit/s
RS-485	MODBUS RTU

Modbus (RS-485) Communication

Cable Length (Shielded)	1Km Maximum
Identification	1-99
Parity	Odd, Even, None
Communication Speeds (kb/s)	2.4; 4.8; 9.6; 19.2; 38.4; 115.2



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Analog Module (TS-ANA)

Each Analog Module expands the TrackSense system with six 4–20 mA inputs for connecting a wide range of off-the-shelf or third-party analog sensors such as current, voltage, pressure transducers, etc.

General Data

Dimensions (W x H x D)	22.6 × 113.7 × 99mm
Weight	< 100g
Operating Temperature	–25 to 70°C
Mounting	35mm DIN Rail, IEC60715
Enclosure Material	PA
IP Rating (Enclosure)	IP20
Flammability Rating (Enclosure)	UL 94 V-0
Climate Categories to IEC60721	Storage – 1K4 Transport – 2K3 Stationary Use – 3K5

Screw Terminals

Wire Size	24 AWG
Stripping Length	7mm
Tightening Torque	0.5Nm

Power

Supply Voltage	20–28V (24VDC)
Supply Current	35mA + Up to 150mA Per Channel (24V)

Inputs (6x 4–20mA Analog)

Input Supplied Voltage	24V
Input Supplied Current	Up to 50mA



Digital Module (TS-DIG)

Each Digital Module expands the TrackSense system with twelve digital inputs for monitoring switches, relays, correspondence contacts, status signals, alarms, and more, enabling fast and reliable detection of digital events for responsive condition monitoring.

General Data

Dimensions (W x H x D)	22.6 × 113.7 × 99mm
Weight	< 100g
Operating Temperature	-25 to 70°C
Mounting	35mm DIN Rail, IEC60715
Enclosure Material	PA
IP Rating (Enclosure)	IP20
Flammability Rating (Enclosure)	UL 94 V-0
Climate Categories to IEC60721	Storage - 1K4 Transport - 2K3 Stationary Use - 3K5

Screw Terminals

Wire Size	24 AWG
Stripping Length	7mm
Tightening Torque	0.5Nm

Power

Supply Voltage	20-28V (24VDC)
Supply Current	40mA + Up to 50mA Per Channel (24V)

Inputs (12x Digital)

On Activation Voltage	5V
Off Activation Voltage	3V
Maximum Digital Voltage	45V



Earth Leakage Detector Module (TS-ELD)

Each ELD Module expands the TrackSense system by adding earth-leakage detection for one busbar, monitoring voltage and insulation resistance to earth, providing early warning of earth-leakage or ground-fault conditions to keep systems safe and reliable.

General Data

Dimensions (W x H x D)	22.6 × 113.7 × 99mm
Weight	< 100g
Operating Temperature	-25 to 70°C
Mounting	35mm DIN Rail, IEC60715
Enclosure Material	PA
IP Rating (Enclosure)	IP20
Flammability Rating (Enclosure)	UL 94 V-0
Climate Categories to IEC60721	Storage - 1K4 Transport - 2K3 Stationary Use - 3K5

Screw Terminals

Wire Size	24 AWG
Stripping Length	7mm
Tightening Torque	0.5Nm

Inputs

Busbar Connection	1
Earth Connection	1
Relay Connections	2

Relays

Number, Assignable	2
Available States	N/O, N/C
Rated Voltage	250 VAC / 30 VDC
Maximum Switching Voltage	277 VAC / 125 VDC
Rated Current	3 A / 5 A
Limiting Continuous Current	3 A / 5 A
Breaking Capacity (Maximum)	750 VA (3 A), 1250 VA (5 A)

Relay Contact Ratings (IEC 61810)

AC	3 A, 250 VAC (resistive, $\cos \phi = 1$), +70 °C - 100 k cycles
DC	3 A, 30 VDC (resistive, L/R = 0 ms), +70 °C - 100 k cycles

Power

Supply Voltage	20-28V (24VDC)
Supply Current	80mA (24V)

Busbar

Earth Leakage Detection	0-999k Ω
Busbar Isolation	2kV
Busbar Rated Voltage	650V AC/DC

Measuring Circuit

Operating Mode	Continuous
Measuring Principle	Square-Wave Injection
Measuring Voltage U_m	± 24 V
Measuring Current I_m ($R_x = 0 \Omega$)	$\leq 170 \mu A$
Internal DC Resistance R_i	143 k Ω
Internal Impedance Z_i	143 k Ω
Permissible Extraneous DC Voltage U_e	750 V
System Leakage Capacitance C_e	$\leq 300 \mu F$

IT System

Rated voltage U_n	up to 650 V AC / 300 V DC
Rated frequency	DC, 50-60 Hz
Maximum rated voltage	750 V