24x7 Hotspot Detection for Bus Duct

Building Resilience into Power Distribution Systems

Exertherm's Bus Duct Monitoring Solution matches the modularity of bus duct, is quick and easy to install, and just as versatile.

It gives users a call-to-action on a specific joint which is potentially faulty and needs attention before a more serious problem occurs.

Continuous monitoring provides a 24x7 early warning system to detect critical temperature rise and reduce the risk of power loss.

24x7 Hotspot Detection

- Enhance safety
- Save costs
- Predict faults
- Increase efficiency

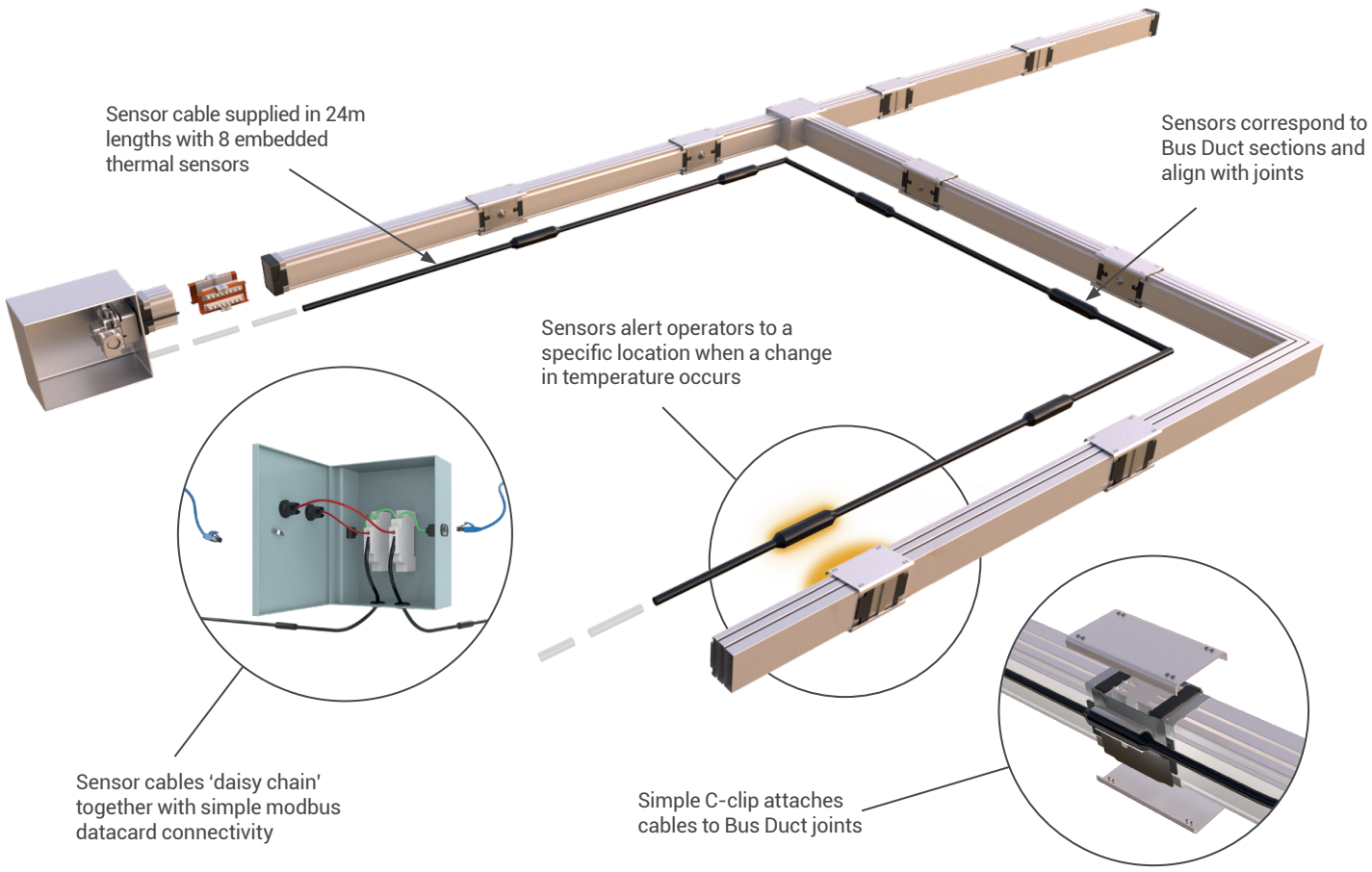
Protect critical electrical infrastructure from power outages
24x7 Thermal Monitoring Solutions

System overview

Bus Duct is a modular electrical system designed to replace conduit and cable power distribution. The ease of installation and modularity of overhead Bus Duct allows fast set up, quick repairs, and easy upgrades.

With all electrical assets, joints are typically the weak spots where faults can occur. Bus Duct is heavy and the effect of gravity, constant heating and cooling and movement from vibration or seismic activity will distort and compromise joints. A compromised joint can only be identified by the excess heat it generates.

Hotspots that are not identified and corrected can lead to power failures or worse - fire, resulting in costly unplanned downtime. As the world leader in thermal monitoring of electrical and mechanical infrastructure, we have developed the unique Exertherm Bus Duct Monitoring Solution, which permanently monitors for hotspots in these critical connection areas.



Identify potentially faulty joints before a more serious problem occurs

Features:

Simple installation

- Works straight out of the box
- Attaches quickly and easily via C-clip
- Sensors fit directly to joints
- No complex commissioning

Flexible solution

- Low cost, modular solution
- Install at the same time as bus duct
- Fits all complex bus duct systems
- Maintenance free
- Locally mounted LED provides quick visual status

Data integration

- Provides 24x7 temperature and alarm data
- Identify the precise location of potential fault
- Modbus 485 data taken direct to EPMS/BMS

Benefits:

Save money

- Lower CAPEX – eliminates the need for thermography at install
- Lower OPEX – eliminates continuous maintenance and periodic inspection
- Avoid cost of unplanned outages

Enhance safety

- Minimize personnel interaction with faulty, compromised or potentially dangerous electrical assets

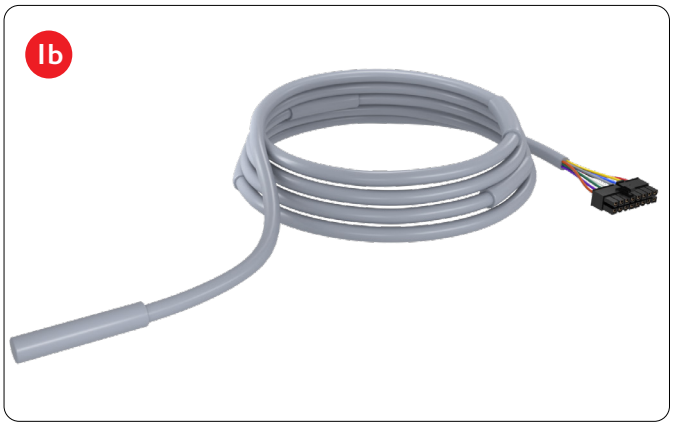
Increase efficiency

- Protect against unplanned downtime and revenue loss by monitoring 24x7

Receive advance warning of a potentially faulty or compromised joint before larger, more significant problems occur.

Bus Duct Monitoring Solution Kit Components

The Exertherm Bus Duct Solution is supplied as a complete kit containing the following components:



Ia Bus Duct Sensor - Modular option:

The Modular set contains 8 thermal sensors pre-labelled S1 through to S8, which are clipped on the Bus Duct joints using C-clips built onto the Bus Duct. The sensors S1 to S8 interconnect using RJ50 patch cables (which comes in various lengths) and the last Sensor S8 connects to an RJ50 lead with factory fitted connector that plugs into the Bus Duct Datacard.

Ib Bus Duct Sensor - Cable option:

The Cable contains 8 thermal sensors pre-labelled S1 through to S8, which are clipped on the Bus Duct joints using C-clips built onto the Bus Duct. The Cable has a factory fitted connector which plugs into the Bus Duct Datacard.

Bus Duct Monitoring Solution Kit Components

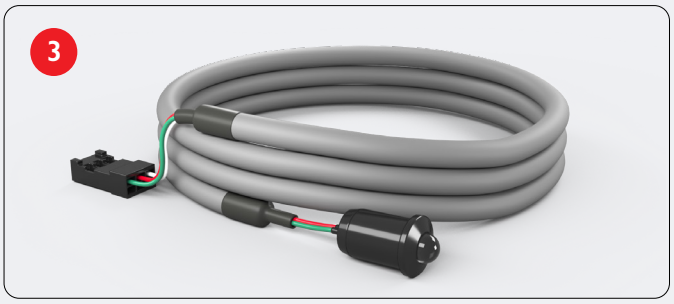
The Exertherm Bus Duct Solution is supplied as a complete kit, containing the following components:

2 Bus Duct Datacard:

The data from the sensors is collected in the DIN rail mounted Datacard and converted to Modbus protocol for onward transmission. It connects to the Bus Duct Sensor Cable via a factory fitted connector. The LED light unit also connects to the Datacard via a factory fitted connector.

The Datacard requires power of 24VDC and is pre-programmed with factory default alarm and device address settings, but the client can use the DIP switches to set their own.

Connection to a network is quick and easy, enabling both remote alarms and pass through of raw data to client host system (e.g. EPMS / BMS) for storage, trending and further integration.



3 Bus Duct Alarm LED:

The LED unit is connected to the Bus Duct Datacard via the pre-wired 3 way connector. This allows visual indication of alarm severity and location remote from the Bus Duct Datacard.

Alarms

For compromised joints there are 3 alarms generated:

- 'Odd man out' temperature alarm
- Average temperature alarm
- Critical high temperature alarm

'Odd man out' temperature alarm is triggered when the difference between any sensor and the sensor either side exceeds the warning level threshold for more than 60 seconds.

The average temperature alarm compares if any joint temperature is out of tolerance compared to an average across all joints.

All alarms are visible both on the Bus Duct Datacard and also via the remote LED. This provides the three important pieces of information:

- Is there a problem?
- Where is the problem?
- How serious is the problem?

These alarms are also available via the modbus serial communication to a client network.

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