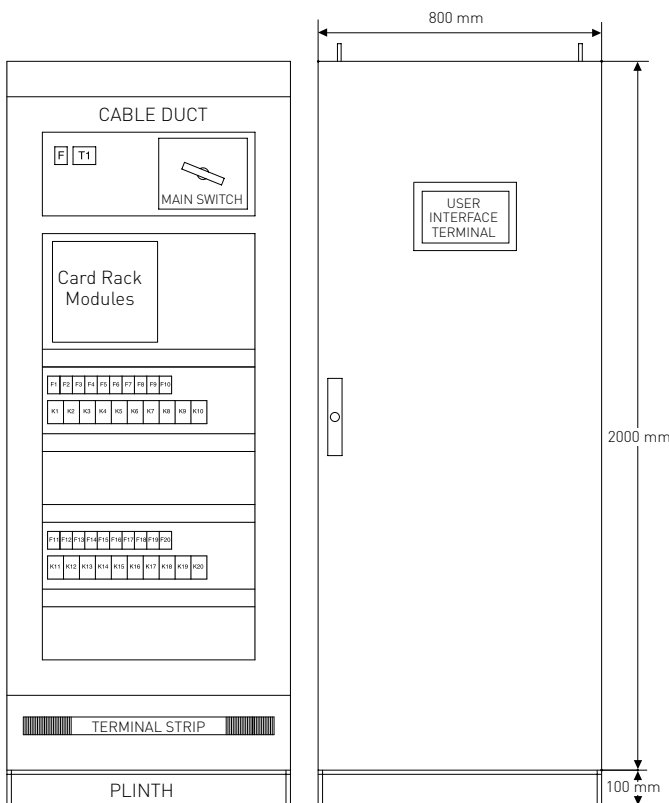




SANTO

DATC-30

PANEL MOUNTED ELECTRONIC MULTI-CIRCUIT HEAT-TRACING CONTROL, MONITORING AND POWER DISTRIBUTION SYSTEM



PRODUCT OVERVIEW

The Santo DATC-30 is a multi circuit electronic control, monitoring and power distribution system for heat-tracing used in process temperature maintenance and freeze protection applications. The system consists of multiple components covering a broad range of requirements from simple temperature monitoring to ground fault, voltage and current measurement, bringing valuable information about the status and health of the heat-tracing circuits from the field into a central location. The Santo DATC-30 system can minimise routine checks by transforming field data into valuable information for maintenance and operations.

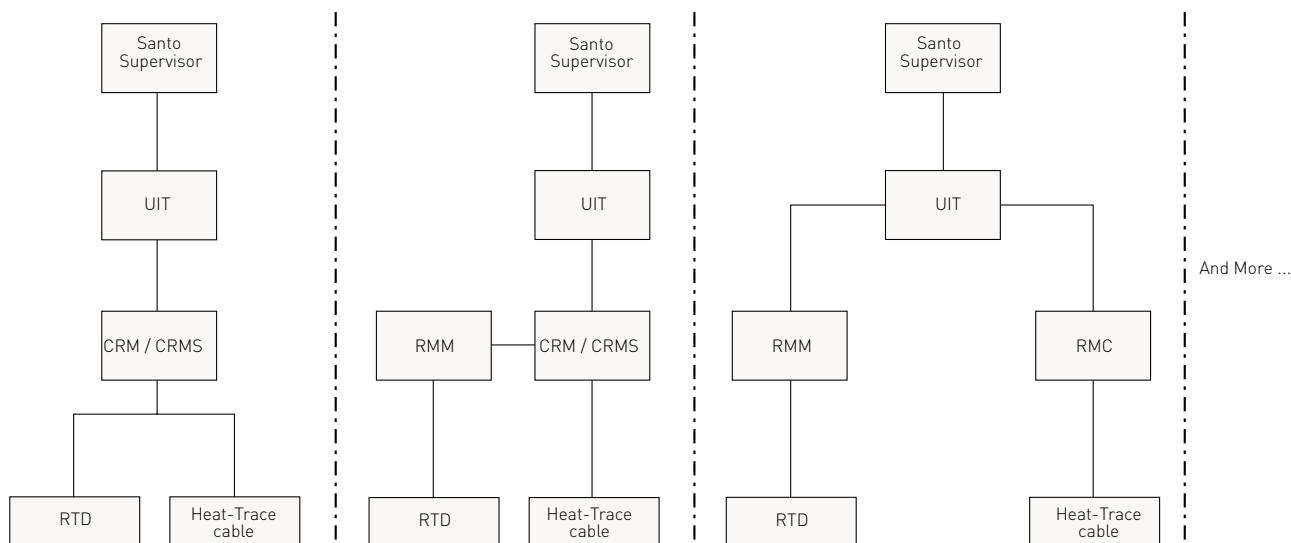
SANTO DATC-30 PANEL

The DATC-30 is available as a complete distribution panel system. Typical characteristics for these panels are easy access, pre-wired and all wiring landed on easy accessible terminals. The enclosure is based on industrial standards while the wiring is optimised for maintenance purposes. The panels are equipped with earth leakage circuit breakers and a main circuit breaker. In addition to these standard features the customer can select additional options based upon the heat-tracing monitoring and control requirements. For example the options include types of contactors (solid state or mechanical), number of circuits plus spare required, voltage monitoring, alarm light indications, panel size, cable entry location and other parameters. A Santo DATC-30 panel system can consist of multiple cabinets which are interlinked via a dedicated communication link. In general the master panel contains the User Interface Terminal (UIT), typically built into the door.

SANTO DATC-30 COMPONENTS

Customers who wish to integrate the Santo DATC-30 system into their own control panels can obtain the individual components separately. The Santo DATC-30 system is configurable in different ways depending upon the requirements of the customer. The user interface for the Santo DATC-30 is the User Interface Terminal (UIT). As soon as ground-fault measurement, line current measurements or distributed control requirements become important, the components Card Rack (CR), Card Rack Modules for mechanical relays (CRM) and/or solid state relays (CRMS), Current Transformer Modules (CTM) and Voltage Module (CVM) should be chosen. Users who want to build on the known and proven technology used in the MoniTrace 200N-E can continue using the fully compatible components; Remote Monitoring Modules (RMM) and Remote Modules for Control (RMC).

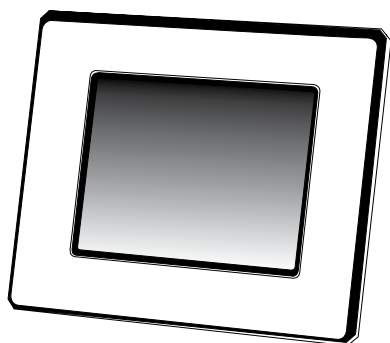
The powerful Santo Supervisor (DTS) heat-tracing controller configuration and monitoring PC-software package completes the system. The Client - Server application enables the user to access all information from anywhere in the world, making Santo Supervisor a strong management tool for the entire Heat Management System.



Examples of various Santo DATC-30 configurations

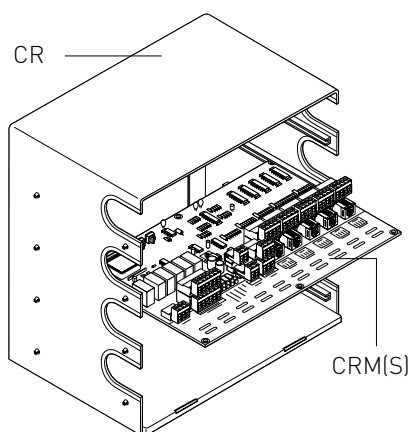
The following section gives an overview of the different components used in the Santo DATC-30 system.

SANTO USER INTERFACE TERMINAL (UIT)



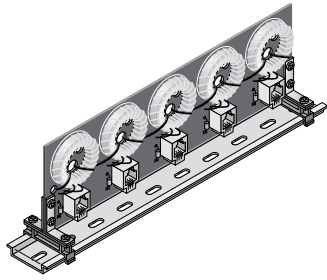
The Santo User Interface Terminal (UIT) is the central part of the Santo DATC-30 communication. The UIT can be used as well with the Santo DATC-20 (for more information see the Santo DATC-20 datasheet). It covers heat-tracing monitoring, configuration and maintenance purposes. The Santo User Interface Terminal (UIT) consists of a 8.4" LCD colour display using touch screen technology. This provides an easy user interface for programming without the need for keyboards or cryptic labels. The Santo UIT communicates via RS-485 to the field and via RS-232/RS-485/Ethernet (selectable) to the Santo Supervisory Software package as well as the plant process control system. The user interface terminal is available in two different models; the Santo DATC-UIT2-ORD, ideal for indoor applications, is for direct mounting on the Santo DATC-30 panel door. The Remote User Interface Terminal (DATC-UIT2-ORD-R) is a panel mounted display (DATC-UIT2-EX) for use with the Santo DATC-30 panel that allows for the user interface to be mounted remotely. For detailed description see installation instruction DATC-UIT2-EX: INSTALL-168.

CARD RACK MODULE (CRM/CRMS)



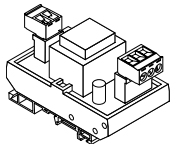
The Santo Card Rack Module controls up to 5 heat-tracing circuits. The Card Rack Modules are available in two versions, the Santo DATC-30 CRM (for mechanical relays) and the Santo DATC-30 CRMS (for solid state relays). Up to four of these Card Rack Modules can be installed in a panel mounted Card Rack. RTD's are either directly connected to the Santo CRM(S) or alternatively collected via RMM's locally or centralized in the field (distributed architecture). The CRM/CRMS solution can control up to 260 individual heat-tracing circuits and monitor up to 388 temperature inputs (including 128 temperature inputs via RMMs).

CURRENT TRANSFORMER (CTM)



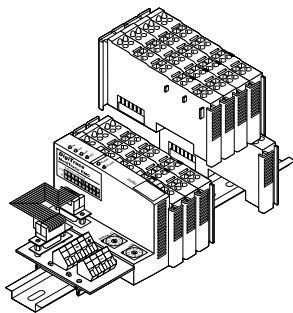
Santo Current Transformers are an important part of the Santo DATC-30 system. Santo CRM in combination with current transformers offer the capability of monitoring and alarming on ground-fault and operating currents. Circuits can be tripped by the controller on high ground-fault currents.

VOLTAGE MODULE (CVM)



Santo Voltage modules (CVM), used in combination with a Santo CRM(S) offer the option to monitor the voltage in the panel. The Santo CVM module uses one channel on one Santo CRM board in a panel.

REMOTE MODULES FOR CONTROL (RMC)

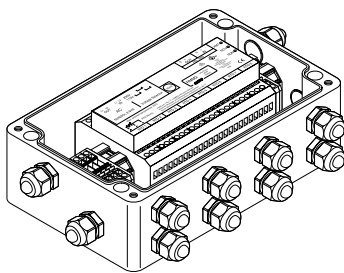


The Santo DATC-30 system also includes integrated control functionality. Multiple relay outputs to operate contactors of each heat-tracing circuit will be provided by Remote Modules for Control (RMC). Temperature inputs will be provided by Remote Monitoring Modules (RMM) while the control is executed by the UIT.

Santo RMC units are modular and may be configured with 2 to 40 relay outputs. Each RMC unit also includes two digital inputs (DI) to monitor the status of circuit breakers or power contactors. A single UIT control unit can communicate with up to 10 RMC modules via a single, twisted pair RS-485 cable to provide distributed control of up to 250 heating cable circuits with a maximum of 128 temperature inputs (see Santo RMM below). For more information refer to the datasheet of Santo MONI-RMC. Circuits controlled via RMCs, can't be combined with the current transformers (CTM).

The Santo DATC-30 system also supports building mixed systems of relay outputs via CRM(S) and RMCs, individual circuits can therefore be configured in the most appropriate way.

REMOTE MONITORING MODULES (RMM)



Remote Monitoring Modules (RMM) provide temperature monitoring capability for the Santo DATC-30 system.

The RMM accepts inputs up to eight Pt 100 temperature sensors that measure pipe or ambient temperatures in a heat-tracing system. Up to 16 RMMs for a total monitoring capacity of 128 temperatures can be connected to the DATC-30 system. There are two versions available. The RMM2-E is without an enclosure. The RMM2-EX-E is built into a Hazardous approved enclosure. For more details see the RMM2-E/RMM2-EX-E datasheet in Technical Databook.