



ICESPY SYSTEM 5: SCOUT_{PLUS} Features and Specification

Overview

- The SCOUT_{PLUS} is one of the sensor and logger options of an IceSpy *System5*. A typical *System5* comprises of a number of SCOUT or SCOUT_{PLUS}, units, one or more BASE units and PC with special PC application software. Optional ECHO and external sensors are also available.
- The SCOUT_{PLUS} is a combination of two Sensors (Dual channel), housed together with power source (battery), radio transmitter, real-time clock and data storage facilities.
- The SCOUT_{PLUS} comprises a single PCB mounted within a custom plastic enclosure. The enclosure is ultrasonically welded to form a watertight enclosure. An external antenna is over moulded onto the plastic case. A waterproof connector is available for external sensors, housed in a moulded casing. A wall or shelf mounting fixture is provided as an integral part of the design
- There is an internal temperature sensor in all units.
- An optional external sensor is configurable for temperature, humidity, door event, and others
- All communication such as upload of settings and download of data is via radio link
- Radio range: up to 1000 metres in free space
- The SCOUT_{PLUS} is in continual communication with other elements of *System5*

Functions

- Measurement, storage and transmission of accurate temperature (and other) readings at predefined intervals
- Automatic fixed recording intervals of 1 minute, 10 minutes and 1 hour
- Can be configured to record maximum, minimum or average temperature during each time period, or (by default) the temperature at the time the recording is made
- Automatic and continual broadcast of current data to BASE units (optionally via ECHO units)
- Can be contacted (using *System5* PC application and BASE unit) to download all stored data
- Alarms:
 - Two LED indicators on sensor, either or both flash every 10 seconds
 - High and low alarm levels configurable via PC in 0.1°C increments
 - Alarm delay configurable up to 3 hours after levels are exceeded
 - Yellow: "all clear"; Red: "alarm state"
 - Both Red & Yellow: all clear now, but alarm has occurred since last download
 - Third (Blue) LED signifies active link to downloading device

Data

- Unique fixed serial number pre-programmed into each unit.
- Overwrites oldest data when full
- Non-volatile data storage (battery not required for preservation of data)
- Separate spaces (each 32 characters) for each recording channel (programmable from PC)
- 8000 date/time/temperature records for each channel, divided between three separate logging intervals:
 - 2000 records with 1-minute data, covering the last 33 hours;
 - 2000 records with 10-minute data, covering the last 13+ days;
 - 2000 records with 60-minute data, covering the last 80+ days.
 - 2000 records available for future developments
- Calibration data table for each sensor. Fully assembled product will undergo an automatic calibration at three set points (10°C/20°/30°C) for internal sensor and for standard reference external sensor. Calibration of actual external sensors available.
- Build level data (software and hardware versions) retrievable by radio link

Interfaces

- Low-power Radio :
 - Frequency: 433.9 MHz (UK/Europe), licence-free band. ETSI 300-220 standard.
 - Power: max 10mW (+10dBm).
 - Transmission rate (broadcast mode) approx. every 60 seconds
 - Length of radio packet approx.20-30 ms
 - Transmission rate (polled mode): up to once per hour.
- Setup (configuration) options selected on PC and transmitted by radio link via BASE unit
 - text descriptions for identification
 - values to record (max, min or average)
 - alarm levels
 - alarm response time
 - Calibration data for internal and external sensors
- (21CFR professional only) Unauthorised set-up preventable by use of password in PC configuration
- Download time approx 300 records per second, fully error-checked
- Download includes full configuration details:
 - unique IceSpy recognition,
 - serial number,
 - alarm level and similar settings,
 - received signal level,
 - build standard hardware,
 - software version number,
 - CRC data check value
 - calibration (authorised users only)
- Information transmitted in broadcast:
 - unique IceSpy recognition,
 - serial number,
 - latest value, e.g. temperature
 - CRC data check value.

Environment / Mechanical / Electrical

- Operating temp. range: -40C to +40C, humidity 0-100%.
- External sensor (temperature) range -80C to +150C
- Dimensions: Body length 120mm plus antenna 150mm approx.
- Case: ABS with rubber overmoulding for sealing antenna and LEDs
- Label adhesion to remain firm with the range -40°C > +80°C immersion in oil
- Weight: 90g excluding external sensor
- Dust / Waterproofing: IP68 (without external sensor)
- Dust / Waterproofing: IP67 (with external sensor connected)
- Multi-purpose mounting clamp for secure fixing
- Battery Sealed into unit, Life >5 years