



Specifications: IceSpy MR-PT100 transmitters/recorders

Recording Channels

- Two channels:
 - One channel for internal thermistor sensor (0°C to +40°C)
 - One channel for external PT100 temperature sensors (-199.99°C to +449.99°C)
- Recording interval 1 to 240 minutes

Memory

- Unique fixed serial number pre-programmed into each unit.
- Option to stop recording when full or to overwrite oldest data
- Non-volatile EEPROM (battery not required for preservation of data)
- Temperature storage resolution of 0.01°C (external probe)
- 21-character spaces for each recording channel (programmable from PC)
- 21-character space for general description (programmable from PC)
- 2218 date/time/temperature records for each channel
- Maximum recording time before overwriting: 1 year (4 hour recording)
- Minimum recording time before overwriting: 37 hours (1 minute recording)

Alarms

- Two LED indicators on sensor, either or both flash every 2 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
- Green: "all clear"; Red: "alarm state"
- Both Red & Green: all clear now, but alarm has occurred since last download
- Alarms not activated until recording starts

Range / Accuracy ()

- +/-0.02°C with standard reference resistance 100ohm
- With Standard PT100 probe:
 - +/-0.10°C between 0°C and +100°C
 - +/-0.25°C between -30°C and 0°C, and +100°C to +125°C
 - +/-0.50°C between -80°C and -30°C, and +125°C to +250°C
- Optional calibrations available to provide up to +/- 0.05°C between 0°C and +100°C
- Cable material: PTFE
- Standard cable length: 1500mm (other lengths available to order)
- Connector: 5-pin DIN
- Dust / Waterproofing: IP65 (excluding connection to recorder)
- Internal sensor accuracy +/-0.5°C (all instrument errors combined)



Mechanical / Environmental

- Dimensions: 185 x 25mm diameter max. Weight: approx. 80g.
- Case: Aluminium, with white resin coating
- Operating temp. range: (electronics) 0°C to +40°C, humidity 10-90%.
- Dust / Waterproofing: IP55 (with external sensor connected)
- Connector for external sensors / communications: 5-pin DIN
- Integral loop for security fixing

Battery

- Chemistry: Lithium Thionyl Trichloride, capacity: 2000 mAh
- Life (10-minute recording, one PC download per week): >8 years

Radio

- Frequency: 433.9 MHz (UK/Europe), licence-free band. ETSI 300-220 standard.
- Power: max 10mW (+10dBm); typical +6dBm
- Range: up to 300 metres in free space, 50m in building. (Depends on position of antenna, and building construction). Less range below -10°C or above +50°C
- Transmission rate approx. every 45 seconds. Length of radio packet approx. 30-40 ms
- Information transmitted: unique IceSpy recognition, serial number, latest temperatures, data check value
- Resolution of transmitted temperatures 0.01°C (external probe)

General

- Setup (configuration) options available from PC: time between readings, channel settings, text descriptions, overwrite or stop when full, advance start, values to record, alarm levels, alarm response time, set password, save and restore configurations.
- Clock accuracy: +/- 2 seconds per day.
- Communications to PC via 9600 bps serial link, conversion to RS-232 in separate cable MR-PCK
- Download time approx 300 records per second, 8-bit summing error check
- Proprietary 'IceSpy' protocol, accessible only via 'IceSpy' PC application.
- Unauthorised set-up preventable by use of password in PC configuration