

Si-RM350



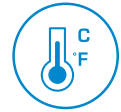
Si-RM450

## DATA SHEET

# MANIFOLD

2-way: Si-RM350

4-way: Si-RM450



A1 / A2L / A3 refrigerants compatible



Durable anti-reflective glass screen



Safe and rugged for long data logging



High-speed NTC temperature sensors



User-friendly troubleshooting with diagnostics



New smart assistant app: Sauermann Pilot

These manifolds can be used to commission and service all types of refrigerant-based installations: heat pumps, air conditioning, refrigeration and reversible systems, from domestic systems to complex industrial machines.

Very easy to operate, this equipment features the latest technologies for fast, comprehensive system diagnostics. Its smart digital assistant guides the operator in every situation to help him achieve his objectives in the best possible way.

## Features:

- 130+ refrigerants supported. Auto updates to industry evolutions
- Perfect readability in daylight sun
- Backlit for indoor use
- Industry leading anti-glare design
- Internal memory data-logging up to 3 days with 300 h battery life
- Anti-theft padlock slot, rear hook and USB-C wired power supply
- Wired and wireless probes (100 m/328 ft range)
- IP54 dust & rain proof body
- "Parrot" clamp shape optimized for 6 to 42 mm (0.2" to 1.7") pipes
- 8 integrated measurement programs
- New "Easy Mode" with single pressure port connected
- Efficiency calculations: COP and EER ratings



## New smart assistant app: Sauermann Pilot

Digital tech leveraged to help technicians

- Free app for iOS & Android mobile devices
- Real time control, readings display and recordings
- Create, sign and send reports with photos
- Report creation in PDF and CSV (for Excel) formats
- Internal detailed customer database management



## PRESSURE TECHNICAL FEATURES

Pressure is measured by flexible hoses connected to the Si-RM350 or the Si-RM450. A probe is also available for pressure measurement, please see the Si-RP4 pressure probes technical data sheet.

|                            |                                           |
|----------------------------|-------------------------------------------|
| Pressure valves            | 3 valves (Si-RM350) / 4 valves (Si-RM450) |
| Measuring range            | From -1 to 60 bar (-14 to 870 psi)        |
| Pressure sensing accuracy* | ±0.50% of full scale                      |
| Available units            | bar, psi, kPa, MPa                        |
| Resolution                 | 0.01 bar / 0.1 psi / 1 kPa / 0.001 MPa    |
| Overload                   | 65 bar (943 psi)                          |
| Burst pressure             | 150 bar (2175 psi)                        |
| Max pressure hose          | 55 bar (800 psi)                          |

## Si-RM350 / Si-RM450 GENERAL FEATURES

|                                 |                                                                                                                                                       |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply                    | 4 × LR6 or AA 1.5 V batteries. Alternative power supply: USB-C                                                                                        |
| Battery life                    | 300 hours**                                                                                                                                           |
| Memory                          | Up to 600 000 points and 9 days of recording                                                                                                          |
| Display                         | Graphic screen; 240 x 128 px                                                                                                                          |
| Languages                       | English, French, Spanish, Italian, German, Chinese, Portuguese, Romanian, Hungarian, Polish, Dutch                                                    |
| Pressure connectors             | Si-RM350: 3x 1/4 MFL male<br>Si-RM450: 3x 1/4 MFL male + 1x 3/8 MFL male                                                                              |
| Temperature connectors          | 2x wired jack (NTC)                                                                                                                                   |
| Wireless frequency              | Range frequency from 2402 MHz to 2480 MHz with a transmission power of 8 dBm.                                                                         |
| Wireless range                  | Range between manifold and wireless probes up to 100 m (328 ft).<br>App connection: depends on smartphone radio strength, range up to 100 m (328 ft). |
| Compatibility                   | Smartphone minimum required versions: Android 11.0, iOS 15, BLE 5.0***                                                                                |
| Port                            | USB-C                                                                                                                                                 |
| Superheat and subcooling        | Automatically calculated by the device                                                                                                                |
| Environmental conditions of use | In non-condensing condition<br>Altitude: from 0 to 2000 m (0 to 6561 ft)<br>Non-corrosive gases                                                       |
| Operating temperature           | From -20 to 50°C (-4 to 122°F)                                                                                                                        |
| Storage temperature             | -20 to 50°C (-4 to 122°F)                                                                                                                             |
| European directives             | 2014/53/EU (RED) - 2015/863 EU (RoHS 3) - 2012/19/EU WEEE                                                                                             |

## TEMPERATURE TECHNICAL FEATURES (Si-RT2, Si-RT7 and Si-RT5 probes)

Pipe temperature can be measured by wired temperature clamp (Si-RT2), wireless temperature clamp (Si-RT7) or wired self-gripping probe (Si-RT5). For further details about these probes, please see the temperature probes technical data sheet for manifold.

| Type of probe                  | Si-RT2                                                                                                      | Si-RT7                                    | Si-RT5                                                                                                      |
|--------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Temperature sensors            | NTC                                                                                                         |                                           |                                                                                                             |
| Temperature sensor range       | -50 to 120°C<br>(-58 to 248°F)                                                                              | -20 to 85°C (-4 to 185°F)                 | -20 to 85°C (-4 to 185°F)                                                                                   |
| Temperature accuracy*          | -20 to 85°C (4 to 185°F): ±1°C (±1.8°F)                                                                     |                                           | -20°C to 70°C (-4 to 158°F):<br>±0.2°C (±0.4°F)<br>70°C to 85°C (158 to 185°F):<br>±0.5°C (±0.9°F)          |
| Maximum operating temperatures | Jaws: 150°C (302°F) - Handle: 90°C (194°F)                                                                  | Jaws: 85°C (185°F) - Handle: 50°C (122°F) | N/A                                                                                                         |
| Available units                | °C, °F                                                                                                      |                                           |                                                                                                             |
| Resolution                     | 0.1°C, 0.1°F                                                                                                |                                           |                                                                                                             |
| Pipes diameter                 | 6 to 42 mm (0.2" to 1.7")                                                                                   |                                           | max 100 mm (max. 3.9")                                                                                      |
| Cable                          | 2 m (6 ft) length with strengthened 3-point jack connector, Ø3.2 mm, in PVC, max. temperature 105°C (221°F) | N/A                                       | 2 m (6 ft) length with strengthened 3-point jack connector, Ø3.2 mm, in PVC, max. temperature 105°C (221°F) |
| Wireless range                 | N/A                                                                                                         | Range up to 100 m (328 ft)                | N/A                                                                                                         |

\*All accuracies specified in this document were conducted under laboratory conditions & can be guaranteed for measurement carried out in the same conditions, or

## VACUUM TECHNICAL FEATURES (Si-RV4 probe)

Si-RM350 and Si-RM450 can measure vacuum using the Si-RV4 wireless vacuum probe. For further details please see the Si-RV4 vacuum probes technical data sheet.

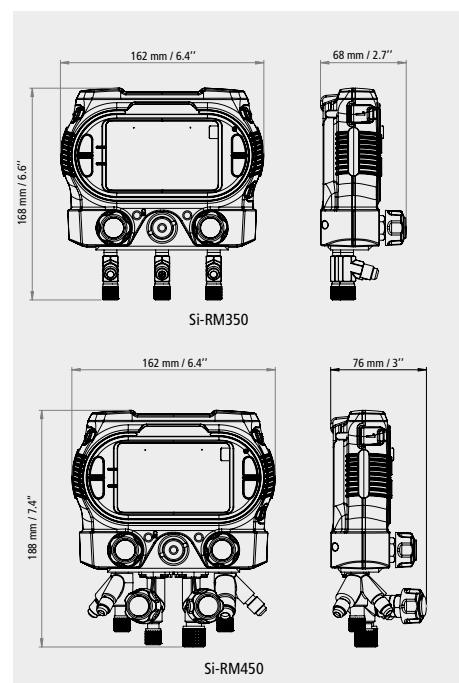
|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement and discharge valves | 1x vacuum input                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Measuring range                  | 50 microns to 25 000 microns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Pressure sensing accuracy*       | 100 to 2000 microns: $\pm(5\% \text{ m.v. } \pm 5 \text{ microns})$<br>Temperature dependence:<br>$\pm 0.0005 \times (T-20) \text{ microns (if } T < 0^\circ\text{C or } T > 30^\circ\text{C})$                                                                                                                                                                                                                                                                                                                                                       |
| Available units                  | micron / mbar / Torr / mTorr / inH <sub>2</sub> O / inHg / mmHg / hPa / Pa                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Resolution                       | 1 micron (50 to 1 000 microns) / 10 microns above<br>0.00001 mbar (0.06666 to 1.33322 mbar) / 0.0001 mbar above<br>0.001 Torr (0.050 to 1.000 Torr) / 0.01 Torr above<br>1 mTorr (50 to 1 000 mTorr) / 10 mTorr above<br>0.0001 inH <sub>2</sub> O (0.0267 to 0.5352 inH <sub>2</sub> O) / 0.01 inH <sub>2</sub> O above<br>0.000001 inHg (0.001968 to 0.039370 inHg) / 0.00001 inHg above<br>0.001 mmHg (0.050 to 1.000 mmHg) / 0.01 mmHg above<br>0.0001 hPa (0.0666 to 1.3332 hPa) / 0.001 hPa above<br>0.01 Pa (6.66 to 133.32 Pa) / 0.1 Pa above |
| Overload                         | 27.5 bar (400 psi)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Burst pressure                   | 35 bar (507 psi)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Wireless range                   | Range up to 100 m (328 ft)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## THERMO-HYGROMETRY PROBE (Si-TH4 probe)

Si-RM350 and Si-RM450 can measure temperature and hygrometry using the wireless thermo-hygrometry probe Si-TH4. For further details please see the temperature probes technical data sheet.

| Parameter                     | Temperature                                                                                                            | Humidity                                                                                                                                                                                                                  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor type                   | CMOS                                                                                                                   |                                                                                                                                                                                                                           |
| Measuring range               | -20 to 60°C (4 to 140°F)                                                                                               | 0 to 100 %RH                                                                                                                                                                                                              |
| Accuracy*                     | -20 to 0°C (-4 to 32°F): $\pm 0.3^\circ\text{C}$ (0.6°F)<br>0°C to 60°C (32 to 150°F): $\pm 0.5^\circ\text{C}$ (0.9°F) | 10 to 90 %RH: $\pm 2\% \text{ RH}$<br>0 to 10 %RH / 90 to 100 %RH: $\pm 5\% \text{ RH}$<br>$\pm 0.04 \times (T-20) \% \text{ RH (if } T < 15^\circ\text{C}/33.8^\circ\text{F or } T > 25^\circ\text{C}/77^\circ\text{F})$ |
| Storage temperature           | -20 to 50°C (-4 to 122°F)                                                                                              |                                                                                                                                                                                                                           |
| Response time T <sub>90</sub> | 60 s                                                                                                                   |                                                                                                                                                                                                                           |
| Available units               | °C, °F                                                                                                                 | %RH                                                                                                                                                                                                                       |
| Resolution                    | 0.1°C, 0.1°F                                                                                                           | 0.1 %RH                                                                                                                                                                                                                   |
| Wireless range                | Range up to 100 m (328 ft)                                                                                             |                                                                                                                                                                                                                           |

## DEVICE DIMENSIONS



## FEATURES OF THE HOUSING

|            |                                                                                |
|------------|--------------------------------------------------------------------------------|
| Control    | 4 keys (Up / Down / OK / Esc)                                                  |
| Hook       | High strength aluminum                                                         |
| Material   | Plastic parts in polyamide reinforced with 30% of glass fiber (PA 6.6 + 30 GF) |
| Protection | IP54, suitable for A2L and A3 refrigerants                                     |
| Weight     | Si-RM350: 0.980 Kg (2.16 lb)<br>Si-RM450: 1.330 Kg (2.93 lb)                   |

\*All accuracies specified in this document were conducted under laboratory conditions & can be guaranteed for measurement carried out in the same conditions. or

## LIST OF REFRIGERANT GASES

The following refrigerants are currently supported in the Si-RM350 and Si-RM450 manifolds. As more refrigerants are made available they can easily be added in the manifold internal memory with a firmware update using the Sauermann Pilot APP.

R11, R113, R114, R115, R1150, R116, R12, R123, R124, R125, R1270, R13, R134a, R13b1, R14, R141b, R142b, R143a, R152a, R161, R170, R218, R22, R227, R23, R236ea, R236fa, R245ca, R245fa, R290, R32, R600, R600a, R601, R601a, R718, R744, R744a, R50, R41, R1233zd(E), R1234yf, R1234zeE, R1234zeZ, R401A, R401B, R401C, R402A, R402B, R403A, R403B, R404A, R405A, R406A, R407A, R407B, R407C, R407D, R407E, R407F, R407H, R408A, R409A, R409B, R410A, R410B, R411A, R411B, R412A, R413A, R414A, R414B, R416A, R417A, R417B, R417C, R418A, R419A, R419B, R420A, R421A, R421B, R422A, R422B, R422C, R422D, R422E, R423A, R424A, R425A, R426A, R427A, R428A, R434A, R437A, R438A, R439A, R440A, R441A, R442A, R443A, R444A, R444B, R445A, R446A, R447A, R448A, R449A, R450A, R452A, R452B, R453A, R454A, R454B, R454C, R455A, R456A, R458A, R466A, R469A, R500, R501, R502, R503, R504, R507A, R508A, R508B, R509A, R511A, R513A

## ACCESSORIES

| Designation  | Sales reference | Description                                                                                                                                 |
|--------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| ACC25830     | 25830           | 2x connectors for system with R410 and R32. 1/4" MFL to 5/16" FFL                                                                           |
| Si-RM6       | 26141           | Extension cable 5 meters length for temp clamp.                                                                                             |
| Si-RS1       | 28153           | Scale. Measurement range up to 110 kg (243 lbs). Wired remote with display. Wireless connection to manifold. Supplied in hard plastic case. |
| Si-RVP1-220V | 28154           | 220 V, 85 l/min vacuum pump. 2-stage. Refrigerants: A2L. Ultimate vacuum: 15 microns.                                                       |
| Si-RVP3-220V | 28156           | 220 V, 170 l/min vacuum pump. 2-stage. Refrigerants: A2L & A3. Ultimate vacuum: 15 microns.                                                 |
| Si-RVP1-110V | 28155           | 110 V, 3 CFM vacuum pump. 2-stage. A2L refrigerants. Ultimate vacuum: 15 microns.                                                           |
| Si-RVP2-110V | 28157           | 110 V, 6 CFM vacuum pump. 2-stage. Suitable for A2L. Ultimate vacuum: 15 microns.                                                           |

## CERTIFICATION

**Certificate:** manifolds are supplied with an individual adjusting certificate and can be supplied with a calibration certificate as an option.

## ORDERING INFORMATION

| Designation             | Sales reference | Description                                                                                                                                            |
|-------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Si-RM350</b>         |                 |                                                                                                                                                        |
| Si-RM350 MANIFOLD KIT 1 | 28146           | Includes 1x Si-RM350 manifold 2 ways, 2x Si-RT2 wired temperature clamps. Supplied in hard plastic case.                                               |
| Si-RM350 MANIFOLD KIT 2 | 28159           | Includes 1x Si-RM350 manifold 2 ways, 2x Si-RT2 wired temperature clamps, 3x hoses. Supplied in hard plastic case.                                     |
| Si-RM350 MANIFOLD KIT 3 | 28147           | Includes 1x Si-RM350 manifold 2 ways, 2x Si-RT7 wireless temperature clamps. Supplied in hard plastic case.                                            |
| Si-RM350 MANIFOLD KIT 4 | 28160           | Includes 1x Si-RM350 manifold 2 ways, 2x Si-RT7 wireless temperature clamps, 3x hoses. Supplied in hard plastic case.                                  |
| Si-RM350 MANIFOLD KIT 5 | 28161           | Includes 1x Si-RM350 2-way manifold, 2x Si-RT2 wired temperature clamps, 1x Si-RV4 wireless vacuum probe. Supplied in hard plastic case.               |
| <b>Si-RM450</b>         |                 |                                                                                                                                                        |
| Si-RM450 MANIFOLD KIT 1 | 28162           | Includes 1x Si-RM450 4-way manifold, 2x Si-RT2 wired temperature clamps. Supplied in hard plastic case.                                                |
| Si-RM450 MANIFOLD KIT 2 | 28163           | Includes 1x Si-RM450 manifold 4 ways, 2x Si-RT2 wired temperature clamps, 4x hoses. Supplied in hard plastic case.                                     |
| Si-RM450 MANIFOLD KIT 3 | 28164           | Includes 1x Si-RM450 manifold 4 ways, 2x Si-RT7 wireless temperature clamps. Supplied in hard plastic case.                                            |
| Si-RM450 MANIFOLD KIT 4 | 28165           | Includes 1x Si-RM450 manifold 4 ways, 2x Si-RT7 wireless temperature clamps, 4x hoses. Supplied in hard plastic case.                                  |
| Si-RM450 MANIFOLD KIT 5 | 28148           | Includes 1x Si-RM450 manifold 4 ways, 2x Si-RT7 wireless temperature clamps, 1x Si-RV4 wireless vacuum probe. Supplied in hard plastic case.           |
| Si-RM450 MANIFOLD KIT 6 | 28149           | Includes 1x Si-RM450 manifold 4 ways, 2x Si-RT7 wireless temperature clamps, 1x Si-RV4 wireless vacuum probe, 4x hoses. Supplied in hard plastic case. |

More information  
about this product

