sauermann®

Si-RM350

Si-RM450

DATA SHEET

MANIFOLD

2-way: Si-RM350
4-way: Si-RM450

- **A1 / A2L / A3 refrigerants compatible**
- **High-speed NTC temperature sensors**
- **Durable anti-reflective glass screen**
- **User-friendly troubleshooting with diagnostics**
- **Safe and rugged for long data logging**
- **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

FREE APP

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

GET IT ON Google Play

Download on the App Store

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PRESSURE TECHNICAL FEATURES

Pressure is measured by flexible hoses connected to the Si-RM350 or the Si-RM450. A probe is also avalaible 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 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). 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 Altitude: from 0 to 2000 m (0 to 6561 ft) 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 (-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): ±0.2°C (±0.4°F) 70°C to 85°C (158 to 185°F): ±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 carried out with calibration compensation. **At 20°C without backlight and wireless communication. *** Can work with BLE4.0 but the wireless range will be downgraded

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.

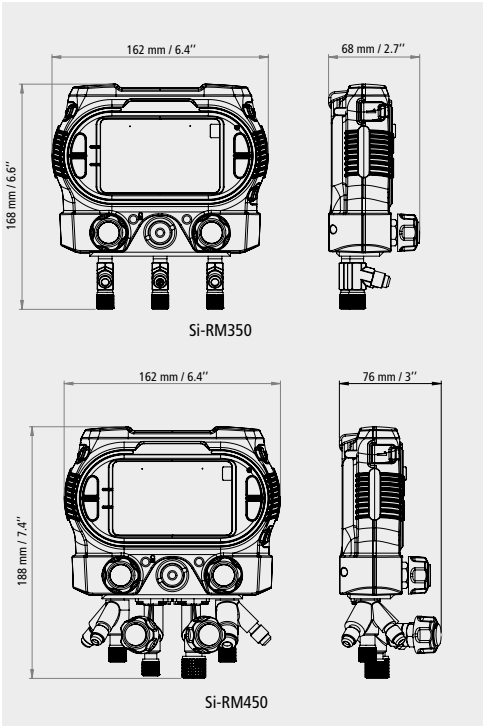
Measurement and discharge valves	1x vacuum input
Measuring range	50 microns to 25 000 microns
Pressure sensing accuracy*	100 to 2000 microns: ±(5% m.v. ±5 microns) Temperature dependence: ±0.0005 x (T-20) microns (if T<0°C or T>30°C)
Available units	micron / mbar / Torr / mTorr / inH_2O / inHg / mmHg / hPa / Pa
Resolution	1 micron (50 to 1 000 microns) / 10 microns above 0.00001 mbar (0.06666 to 1.33322 mbar) / 0.0001 mbar above 0.001 Torr (0.050 to 1.000 Torr) / 0.01 Torr above 1 mTorr (50 to 1 000 mTorr) / 10 mTorr above 0.0001 inH_20 (0.0267 to 0.5352 inH_2O) / 0.01 inH_2O above 0.000001 inHg (0.001968 to 0.039370 inHg) / 0.00001 inHg above 0.001 mmHg (0.050 to 1.000 mmHg) / 0.01 mmHg above 0.0001 hPa (0.0666 to 1.3332 hPa) / 0.001 hPa above 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): ±0.3°C (0.6°F) 0°C to 60°C (32 to 150°F): ±0.5°C (0.9°F)	10 to 90 %RH: ±2 %RH 0 to 10 %RH / 90 to 100 %RH: ±5 %RH ±0.04 x (T-20)%RH (if T<15°C/33.8°F or T>25°C/77°F)
Storage temperature	-20 to 50°C (-4 to 122°F)	
Response time T_{90}	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) 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 carried out with calibration compensation.

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
Si-RM350		
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-RM450		
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.

Sauermann APAC

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More information about this product

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