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hydraulics
pneumatics
process control
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SensoControl®

Diagnostic Test Equipment for Hydraulics



ENGINEERING YOUR SUCCESS.

Diagnostic Test Equipment for Hydraulics

All the instruments meet the guidelines of the European Community (EU).
It is confirmed that these products are approved acc. to following standards.



DIN/EN 61000-6-2
DIN/EN 61000-6-3

Note!

This document and other information from Parker Hannifin GmbH, provide product or system options for further investigation by users having technical expertise. Before you select or use any product or system it is important that you analyse all aspects of your application and review the information concerning the product or system in the current product catalogue. Due to the variety of operating conditions and applications for these products or systems, the user, through his own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance and safety requirements of the application are met. The products are subject to change by Parker Hannifin GmbH at any time without notice.

Technical subject to change. December 2013.

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Table of contents

Contents


Page

Product overview	4
Measuring devices	6
Finding the best measuring device	7
1 ServiceJunior	8
2 Parker Serviceman Plus	13
3 The Parker Service Master <i>Easy</i>	17
4 The Parker Service Master <i>Plus</i>	21
5 PC software SensoWin®	28
Test kit	30
6 Test kit SCJN	30
Sensors	34
Finding the best sensor	34
7 Electrical signal measurement	37
8 Pressure measurement SCP analogue	40
9 Pressure measurement SCP CAN	43
10 Pressure/temperature measurement SCPT analogue	46
11 Pressure/temperature measurement SCPT	49
12 Temperature measurement SCT analogue	52
13 Temperature measurement SCT CAN	57
14 Tachometer SCRPM analogue	61
15 Turbine flow meter SCFT analogue	65
16 Turbine flow meter SCFTT CAN	70
17 Hydraulic testers SCLV analogue and CAN	75
18 Flow meter SCQ analogue	79
19 Volume meter SCVF	85
Accessories	90
20 SCK Connection cables	90
21 Diagnostic adapters SCA	92
22 Equipment cases for Parker handheld measuring devices	94
Index of order codes	96









Product overview

Measuring devices and test kit


ServiceJunior <ul style="list-style-type: none"> ✓ Easy operation, rugged and reliable 	Parker Serviceman Plus <ul style="list-style-type: none"> ✓ Easy operation, rugged and reliable ✓ Automatic sensor recognition ✓ Up to 3 sensors ✓ PC connection ✓ PC software SensoWin® 
Page 8	Page 13
The Parker Service Master Easy <ul style="list-style-type: none"> ✓ Easy operation, rugged and reliable ✓ Automatic sensor recognition ✓ Up to 4 sensors ✓ PC connection ✓ PC software SensoWin® 	The Parker Service Master Plus <ul style="list-style-type: none"> ✓ Easy operation, rugged and reliable ✓ Portable, multi-function handheld measuring device with CAN bus connection ✓ For recording, saving and analysing measured data ✓ PC software SensoWin® 
Page 17	Page 21
PC software SensoWin® <ul style="list-style-type: none"> ✓ Automation of measuring procedures, analysis and printout of documentation 	Test kit SCJN <ul style="list-style-type: none"> ✓ Easy pressure generation to test and adjust pressure meters and sensors 
Page 28	Page 30

Sensors


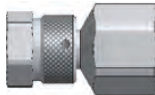

Electrical signal measurement 	Pressure sensors SCP analogue 	Pressure sensors SCP CAN 
Frequency, current and voltage measurement e.g. for connecting external sensors	Pressure measurement in standard applications	Pressure measurement in standard applications with CAN bus
Page 37	Page 40	Page 43
Pressure/temperature sensors SCPT analogue 	Pressure/temperature sensors SCPT CAN 	Temperature sensors SCT analogue 
Analogue pressure/temperature sensors	Pressure/temperature sensors with CAN bus	High-pressure-resistant analogue temperature sensors and probes
Page 46	Page 49	Page 52

Product overview

Sensors continued

Temperature sensors SCT CAN	Tachometer SCRPM analogue	Turbine flow meter SCFT analogue
		
High-pressure-resistant temperature sensor with CAN bus	No-contact tachometer	Turbine flow meter analogue
Page 57	Page 61	Page 65
Turbine flow meter SCFTT CAN	Hydraulic testers SCLV	Flow meter SCQ analogue
		
Turbine flow meter CAN with integrated temperature sensor	Hydraulic testers in analogue and CAN versions	Flow meter
Page 70	Page 75	Page 79
Volume meter SCVF		
		
High-precision volume flow measurement over broad viscosity range		
Page 85		

Accessories

SCK connection cables	Diagnostic adapters SCA	Equipment case
		
Cable for CAN bus and analogue sensors	Adapter to M16x2 measurement system	Rugged equipment case
Page 90	Page 92	Page 94

Measuring devices

Measuring devices

- Long-term stability
- Rugged design
- Easy operation
- Flexible use on site
- Documentation of measured values

SensoControl® handmeters and accessories are ideal measuring tools for every application. Whether you use them in industry, mobile hydraulics, service or repair: measuring and processing hydraulic values is the basis for reliable troubleshooting. That is why modern tools are essential to today's service technicians when it comes to systematic searches for errors.

High-speed processes such as switching valves, cylinder strokes, pressure peaks, differential pressures and flow changes must be measured and evaluated simultaneously.



SensoControl® handmeters are specially developed for the following applications:

- Measuring and displaying hydraulic values such as pressure, differential pressure, pressure peaks, temperature and flow as well as speed.
- Mobile recording of measured values in high precision and with easy operation.
- All **SensoControl®** handmeters and accessories are manufactured and tested in our own plants. Our constant insistence on top quality and flexibility makes Parker your reliable partner.



Finding the best measuring device

Finding the best measuring device

Choice/feature	ServiceJunior	Parker Serviceman Plus	The Parker Service Master Easy	The Parker Service Master Plus
Measurement	●	●	●	●
Display	●	●	●	●
Memory	—	●	●	●
Read out	ACT/MIN/MAX/FS (peak-hold)	ACT/MIN/MAX FS	ACT/MIN/MAX FS	ACT/MIN/MAX/FS (peak-hold)
2-channel display	—	●	●	●
3-channel display	—	●	●	●
4-channel display	—	—	●	●
≥ 6-channel display	—	—	—	●
Additional channel	—	—	—	●
Pressure peaks	10 ms	1 ms	1 ms/0.25 ms	1 ms/0.1 ms
Pressure	●	●	●	●
Calculation channels	—	●	●	●

Functions

Operation with	Battery	Rechargeable battery	Rechargeable battery	Rechargeable battery
Interface	—	USB	USB	USB/Ethernet
Online function	—	●	●	●
Data recording	—	●	●	●
External power supply	—	●	●	●

Sensor connection

Pressure	● (integrated)	●	●	●
Temperature/RPM/flow	—	●	●	●
Electrical signals	—	○	○	●
External sensors	—	○	○	●
Parker CAN bus sensors	—	●	—	●

- not available
- optional
- standard



1 ServiceJunior

ServiceJunior

- Digital pressure measurement and back-lit display
- Accuracy $\pm 0.1-0.5\%$ FS (full scale)
- Display with bar graph (trailing indicator) with peak-hold function
- Pressure peak capture at 10-ms scanning rate
- Easy operation
- Long-term stability
- Rotatable



The **ServiceJunior** measures and displays pressures in a single device. Measured values are shown with high precision on a 4-digit display. Pressure peaks are securely captured at a scanning rate of 10 ms.

The **ServiceJunior** stands out for its easy operation. With its attractive price to performance ratio, the instrument offers all the advantages of digital pressure measurement.

The MIN and MAX value saving also makes it possible to record pressure peaks.







Blue	Green	Orange	Red	Black
16 bar	100 bar	400 bar	600 bar	1000 bar



1 ServiceJunior

Function specifications



No.	Function
A	Trailing indicator with bar graph from peak-hold function
B	Display of MIN/MAX or full scale range (FS)
C	Battery level display
D	ACT value back-lit display (13.5 mm)
	<ul style="list-style-type: none"> On/off switch Back-lit display
	Minimum/maximum value/full scale (FS)
	<ul style="list-style-type: none"> Automatic shut-off, choice of units Zero-point correction
	<ul style="list-style-type: none"> Reset MIN and MAX values Confirm menu function

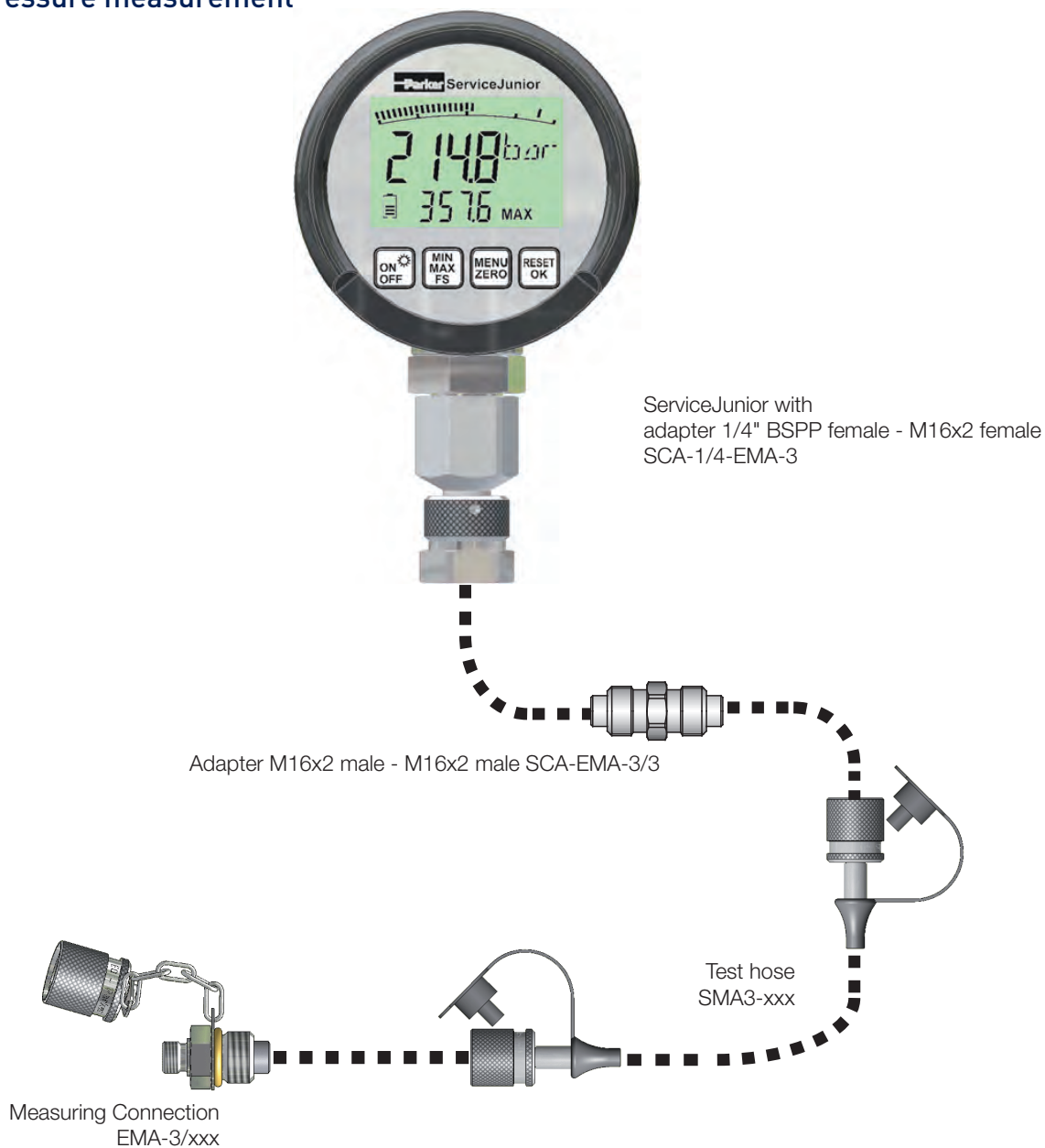
Measuring devices



1 ServiceJunior

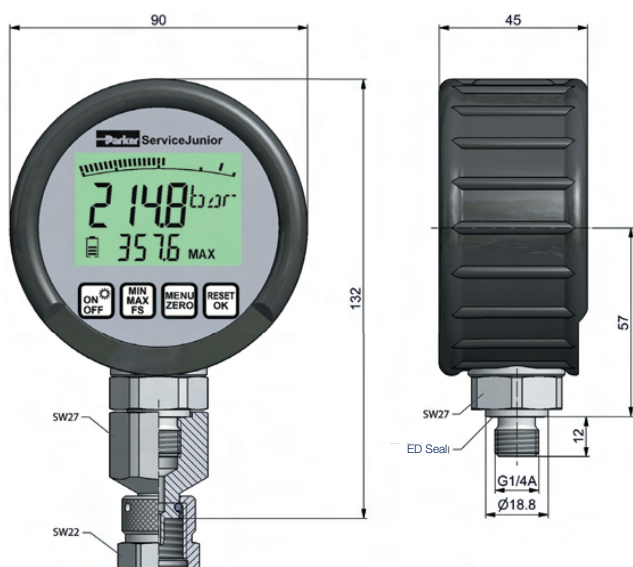
Pressure measurement

Measuring devices



1 ServiceJunior

Technical data



Measuring devices

SCJN	016	100	400	600	1,000		
Range (bar)	-1...16	0...100	0...400	0...600	0...1,000*	Sealing	NBR
Range (bar)	16	100	400	600	630	Parts in contact with media	Stainless steel, NBR
Overload pressure P_{max} (bar)	32	200	800	1,000	1,000	Functions	Units: mbar, bar, PSI, Mpa, kPa, kg/cm ² Display MIN/MAX/FS Battery level display Auto power Off/On Zero (zero-point correction) Reset (delete MIN/MAX)
Burst pressure (bar)	160	800	1,700	2,000	2,000	Power supply	2 1.5V batteries (AA) Battery lifetime max. 1,500 h
Housing	Ø = 90 mm; D = 45 mm Zinc die casting with rubber TPE protection cover					Ambient temperature (°C)*	-10...+50
Weight	approx. 300 g					Storage temperature (°C)	-20...+60
Pressure port	Stainless steel 1/4" BSPP (ISO 228-1), M16x2 SCA-1/4-EMA-3 adapter included					Media temperature (°C)	+80
Input	PMC pressure measurement cell 10-ms scanning rate Accuracy ± 0.5 % FS: SCJN-xxx-01 ± 0.25 % FS: SCJN-xxx-03 ± 0.1 % FS: SCJN-xxx-02 + 0.2 %/year A/D converter 12 bit					Rel. humidity	< 85 %
Display	LC text display, 4.5 digits, 50x34 mm Digit size ACT value display 13.5 mm Back-lit illumination Bar graph (trailing indicator) with peak-hold function (analogue output on request)					Type of protection	IP67 EN 60529
						Vibration resistance	IEC 60068-2-6/10...500 Hz, 5 g
						Shock load	IEC 60068-2-29/25 g, 11 ms
						Reliability cycles	100 million
						Rubber color	blue 0...016 bar green 0...100 bar orange 0...400 bar red 0...600 bar black 0...1000 bar

* 0...50 °C for SCJN-xxx-02



1 ServiceJunior

Supply range and accessories

Measuring devices

ServiceJunior: measuring ranges -1...016 bar/0...100 bar/0...400 bar/0...600 bar/0...1,000 bar		Order code
Accuracy $\pm 0.5\%$ FS		SCJN-xxx-01
Accuracy $\pm 0.25\%$ FS		SCJN-xxx-03
Accuracy $\pm 0.1\%$ FS		SCJN-xxx-02
Included in the supply package: ServiceJunior (according to pressure range), 1.5 V batteries (AA), SCA-1/4-EMA-3 adapter		
Spare parts/accessories		Order code
Equipment case		SCC-120
Rubber protection		SCJN-RUBBER
ServiceJunior kits: measuring ranges -1...016 bar/0...100 bar/0...400 bar/0...600 bar		Order code
Included in the supply package:		SCJN KIT xxx*
<ul style="list-style-type: none"> ■ Equipment case SCC-120 ■ ServiceJunior SCJN-xxx-01 incl. adapter (1/4" BSPP female - M16x2 female) SCA-1/4-EMA-3 ■ Adapter (M16x2 male - M16x2 male) SCA-EMA-3/3 ■ Test hose 1,500 mm (M16x2) SMA3-1500 		
ServiceJunior with calibration certificate as per ISO 9001		Order code
ServiceJunior		K-SCJN-xxx-01
ServiceJunior kits		K-SCJN KIT xxx*
* not available for 1,000 bar		



2 Parker Serviceman Plus

Parker Serviceman Plus

- Easy operation
- Rugged design with oil-resistant rubber protection
- Plug & Play function
- Large back-lit display
- Innovative memory system with nano USB stick
- PC connection
- Incl. PC software SensoWin®
- Available in 2 versions: analogue or CAN



Measuring devices

Analogue version



CAN version



The new **Parker Serviceman Plus** is a mobile, extremely robust and easy to use measuring device for a large range of measuring tasks in mobile hydraulics or stationary hydraulic plants.

With the automatic sensor recognition you can simply plug in pressure, temperature, flow or speed sensors and start measuring immediately. There is no need to parameterise the sensors because the measuring ranges are automatically scaled and the measured value shown on the display.

Advantages of the Parker CAN bus

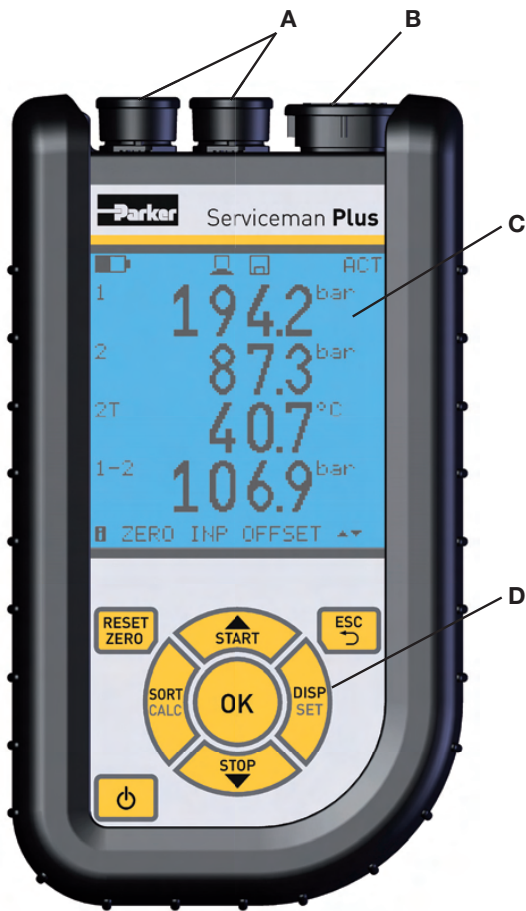
- Cable lengths up to 50 m
- Low wiring effort, up to 3 sensors on one bus line
- High interference resistance due to digital data transfer
- Plug & Play functionality without parameterisation



2 Parker Serviceman Plus

Function specifications

Measuring devices



A	Sensor connections
B	USB connections for external hard drive, charging function and data transfer to PC
C	Back-lit display
D	Keypad
	On/off switch
	<ul style="list-style-type: none">■ Reset MIN and MAX values■ Zero-point correction
	Back
	Confirm selection
	<ul style="list-style-type: none">■ Sort channels on display■ Add calculation channel
	<ul style="list-style-type: none">■ Switch display: MIN and MAX values, final sensor value or temperature■ Basic device settings
	Start measurement saving
	Stop measurement saving



2 Parker Serviceman Plus

Technical data

	SCM-155-0-02 analogue	SCM-155-2-05 CAN
Inputs		
Sensor inputs	2 Parker analogue sensors with sensor recognition	CAN bus interface for up to 3 Parker CAN bus sensors with sensor recognition
Measuring accuracy	< ± 0.2 % FS ± 1 digit	–
Plug connection	5 pin, push-pull	5 pin, M12x1, SPEEDCON®, plug
Scanning rate	1 ms	1 ms
Interfaces		
USB device	Online data transfer between device and PC via PC software SensoWin®, measured value transfer: ACT/MIN/MAX, min. 5 ms, USB standard: 2.0, full-speed, plug connection: micro-USB port, shielded, type B	
USB host	Port for USB stick, max. 4 GB, recommended types: Delock USB 2.0 Nano-Stick, Intenso Micro Line, USB standard: 2.0, full speed, max. 100 mA, plug connection: micro-USB port, shielded, type B	
Memory		
Internal measured value memory	1 measurement, approx. 15,000 data sets (270,000 measured values ACT/MIN/MAX)	
USB stick	1 GB included in the supply package	
Functions	Difference, addition, hydraulic power, ACT, MIN, MAX, FS, TEMP display, battery level, start/stop measurement	
Display		
Type	FSTN-LCD, graphic, with LED back-lit illumination	
Visible area	62 mm x 62 mm	
Resolution	130 x 130 pixels	
Power supply (external)	Micro-USB port, type B, + 5V DC, max. 1,000 mA	
Rechargeable battery		
Type	Lithium ion pack, 3.7 V DC/2250 mAh	Lithium ion pack, 3.7 V DC/4500 mAh
Battery charging time with power supply unit	approx. 3.5 h	approx. 7 h
Battery discharge time	> 8 h, with 2 sensors	> 8 h, with 2 CAN bus sensors
Housing		
Housing material	PC/ABS/POM	
Housing protective cover material	TPU	
Dimensions (W x H x D)	96 x 172 x 54 mm	
Weight	approx. 300 g	
Ambient conditions		
Ambient temperature	0...+50 °C	
Storage temperature	-25...+60 °C	
Rel. humidity	< 80 %	
Environmental impact test	DIN EN 60068-2-32 (1 m free fall)	
Type of protection	IP54 EN 60529	IP67 EN 60529
PC software SensoWin®	Read-out, display, computer analysis of measured data, read-out, alteration of device settings, loading of device settings from library onto handheld device	



2 Parker Serviceman Plus

Supply range and accessories

Measuring devices

Parker Serviceman Plus Supply scope	Order code	
	SCM-155-0-02 analogue	SCM-155-2-05 CAN
Power supply unit with USB connection 110/240 VAC, 1 A, SCSN-440	●	●
Nano USB stick 1 GB	●	●
1-m USB connection cable (for charging and connection to PC)	●	●
PC software SensoWin®	●	●

Spare parts and accessories	Order code
Car cable adapter with USB connection 12/24 VDC, 1 A	SCNA-USB-CAR
2-m USB connection cable (for charging and connection to PC)	SCK-315-02-36
Equipment case	SCC-200

Parker Serviceman Plus kits	Order code				
	SCKIT-155-0-00	SCKIT-155-2-00	SCKIT-155-0-600	SCKIT-155-2-600	SCKIT-155-0-PQ
Equipment case	SCC-200	SCC-200	SCC-200	SCC-200	SCC-DRV-300
Parker Serviceman Plus incl. USB stick, power supply unit, PC connection cable and PC software SensoWin®	SCM-155-0-02 (analogue)	SCM-155-2-05 (CAN)	SCM-155-0-02 (analogue)	SCM-155-2-05 (CAN)	SCM-155-0-02 (analogue)
Pressure sensor, 600 bar analogue SCP-600-74-02	—	—	1	—	—
Pressure sensor, 600 bar CAN SCP-600-C4-05	—	—	—	1	—
Pressure/temperature sensor SCPT-600-02-02	—	—	—	—	1
Turbine flow meter SCFT-150-DRV	—	—	—	—	1
Connection cable, analogue SCK-102-3-02	2	—	1	—	2
Connection cable, CAN SCK-401-02-4F-4M	—	2	—	1	—
CAN Y-junction SCK-401-0.3-Y	—	1	—	—	—
CAN terminating resistor SCK-401-R	—	1	—	1	—
EMA adapter SCA-EMA-3/3	2	2	1	1	1
Test hose SMA3-1500CF	2	2	1	1	1
Please order further accessories/sensors separately					

Parker Serviceman Plus with calibration certificate as per ISO 9001	Order code
Parker Serviceman Plus analogue	K-SCM-155-0-02
Parker Serviceman Plus analogue	K-SCKIT-155-0-00
Parker Serviceman Plus kit analogue with 600-bar sensor	K-SCKIT-155-0-600
Parker Serviceman Plus kit CAN with calibrated 600-bar sensor	K-SCKIT-155-2-600
Parker Serviceman Plus analogue p-Q kit	K-SCKIT-155-0-PQ



3 The Parker Service Master *Easy*

The Parker Service Master *Easy*

- 3-channel and 4-channel versions
- Easy operation due to automatic sensor recognition
- PC connection
- Calculation channels
- Integrated memory
- Trigger saving
- Incl. PC software SensoWin®



Measuring devices

The Parker Service Master *Easy* is a multi-channel handheld measuring device for the simultaneous measuring of important hydraulic values.

All hydraulic parameters such as pressure, differential pressure, flow and hydraulic power can be measured, displayed, saved and processed.

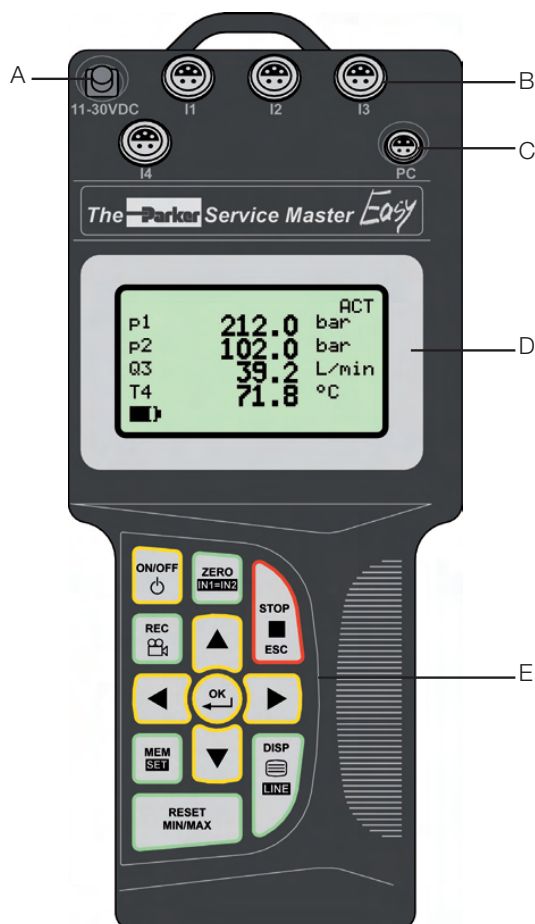
To meet the requirements of both modern industrial hydraulics and complex mobile hydraulics, we offer a range of different models.













3 The Parker Service Master *Easy*

Function specifications

Measuring devices



A	11-30 VDC port for power supply 110/230 VAC-15 VDC or car cable adapter 12/24 VDC
B	I1 – I4 sensor connections
C	PC (USB) port
D	Display
E	Keypad
	ON/OFF
	Confirmation of function/value
	Selection of function/value
	
	Stop/Escape
Menu keys	
	<ul style="list-style-type: none"> Zero-point correction Differential value alignment
	<ul style="list-style-type: none"> Memory configuration Main menu (device settings)
	<ul style="list-style-type: none"> MIN, MAX/ACT or FS display Display configuration
	Measured value recording
	Reset MIN and MAX values



3 The Parker Service Master Easy

Technical data

The Parker Service Master Easy	
Input	3 or 4 Parker analogue inputs with sensor recognition
Plug connection	5 pin, push-pull
Accuracy	
Accuracy	$\pm 0.2 \% \text{ FS} \pm 1 \text{ digit}$
Scanning rate	1 ms 0.25 ms FAST MODE (IN1)
Interface	USB 2.0, compatible with USB 1.1 Min. 5 ms online data transmission ACT, MIN, MAX
Memory	Start/Stop, trigger and point measuring
Measured value storage	1,000,000 points
Curve memory	240,000 points
Data format	ACT MIN/MAX FAST (0.25 ms) IN1
Memory configuration	Interval (e.g. 5 ms) Points/channel (2,000)
Display	
LCD resolution	128 x 64 pixels with back-lit illumination
Visible area	72 x 40 mm
Digit size	6 mm (with 4-line display)
Functions	Difference, addition, hydraulic power, volume, ACT, MIN, MAX, FS, TEMP display, battery level
Power supply (external)	11 ... 30 VDC
Power supply	110/240 VAC-15 VDC
Car cable adapter	12/24 VDC
Rechargeable battery	
Type	NiMH
Operating time	with 3 sensors approx. 8 h
Housing	Polyamide, 235 x 106 x 53 mm, weight: 530 g
Ambient conditions	
Ambient temperature	0 ... 50 °C
Storage temperature	-25 °C ... 60 °C
Temperature error	0.02 % / °C
Rel. humidity	< 80 %
Type of protection	IP 54 EN 60529
Drop test	IEC 60
PC software SensoWin®	Read-out, display, computer analysis of measured data, read-out, alteration of device settings, loading of device settings from library onto handheld device



3 The Parker Service Master *Easy*

Supply range and accessories

Measuring devices

The Parker Service Master <i>Easy</i> with power supply unit SCSN/PC software Sen-soWin®/PC cable		Order code
The Parker Service Master <i>Easy</i>	3-channel	SCM-330-2-02
The Parker Service Master <i>Easy</i>	4-channel	SCM-340-2-02

Spare parts/accessories		Order code
Power supply	110/230 VAC EUR/UK/US	SCSN-450
Car cable adapter	12/24 VDC	SCK-318-05-21
PC connection cable	USB	SCK-315-02-34
Spare rechargeable battery		SC-BAT-340
Equipment case		SCC-DRV-300

The Parker Service Master <i>Easy</i> kits	Order code		
	SCKIT-330-00	SCKIT-340-00	SCKIT-340-PTQ
Equipment case SCC-DRV-300	1	1	1
The Parker Service Master <i>Easy</i>	SCM-330-2-02	SCM-340-2-02	SCM-340-2-02
Pressure/temperature sensor 0...600 bar SCPT-600-02-02	—	—	2
Temperature sensor SCT-190-00-02	—	—	1
Turbine flow meter SCFT-150-DRV	—	—	1
3-m connection cable SCK-102-03-02	3	2	2
5-m connection cable SCK-102-05-02	—	2	2
Adapter (M16x2 male - M16x2 male) SCA-EMA-3/3	2	2	2
Test hose 1,500 mm (M16x2) SMA3-1500	2	2	2
Please order further accessories/sensors separately			

The Parker Service Master <i>Easy</i> with calibration certificate as per ISO 9001		Order code
The Parker Service Master <i>Easy</i>	3-channel	K-SCM-330-2-02
The Parker Service Master <i>Easy</i>	4-channel	K-SCM-340-2-02
The Parker Service Master <i>Easy</i> kit		K-SCKIT-330-00
The Parker Service Master <i>Easy</i> kit		K-SCKIT-340-00
The Parker Service Master <i>Easy</i> p-Q kit		K-SCKIT-340-PTQ



4 The Parker Service Master *Plus*

The Parker Service Master *Plus*

- Mobile multi-function handheld measuring device
- Pressure, temperature, volume flow and speed can be measured, monitored and analysed.
- Measurements and displays from 26 sensors
- Measured values shown as numeric, bar graph, gauge and curve displays
- Project templates can be stored and loaded
- Interfaces: CAN, LAN, USB
- Total memory for more than 1 billion measured values
- Measured data can be (automatically) recorded, saved and analysed with the PC software SensoWin® and a LAN or USB connection



Measuring devices

The application possibilities for hydraulics have recently increased throughout all areas of drive and control systems. This trend has been particularly noticeable in machine, plant and automotive construction. At the same time, hydraulics and electronics have become increasingly interlinked. The new **The Parker Service Master *Plus*** handheld measuring device responds to these developments. It has never been so easy to measure, display and analyse the complex processes in these sectors. Potential uses include preventative maintenance, commissioning, troubleshooting and machine optimization.

The increased requirements of these modern applications (e.g. several measurement points, longer cables and high noise immunity) have driven further development of the CAN bus. Parker's CAN bus sensors now take advantage of the bus system's automatic sensor detection capability to provide an optimised and easy-to-install Plug & Play solution. However, compatibility with existing diagnostic sensors is still ensured.

Our proven storage strategy is focused on MIN and MAX value measurements. Combined with a wide variety of value presentation styles, these features make effective, solution-oriented analysis possible.

The PC software SensoWin® offers additional methods of analysis, control and remote maintenance using LAN and USB connections. Together with this software, **The Parker Service Master *Plus*** is a truly user-friendly measuring instrument that can be used for any type of diagnostics application.



4 The Parker Service Master *Plus*

Function specifications

Measuring devices

110/240 VAC power supply,
battery life 8 hours,
recharging time 3 hours

2 CAN bus networks
of 8 sensors each

Modular design for up to 16 analogue
channels or 2 highspeed channels (0.1 ms)
automatic sensor recognition

PC interface (USB 2.0);
ACT/MIN/MAX measured
value transmission to the
PC software SensoWin®,
terminal for USB mass
storage devices

LAN interface for re-
mote monitoring, micro
SD memory card for
storage enlargement

High protection against moisture
and dirt offered by
covers and
rubber case,
protection class IP 64

Strap for
easy carrying
and suspension

Mobile multifunction
handheld measur-
ing device – strong
design and tough
durability

Illuminated
display for high
legibility in
all situations

Large keypad
and lettering
for easy
operation and
legibility

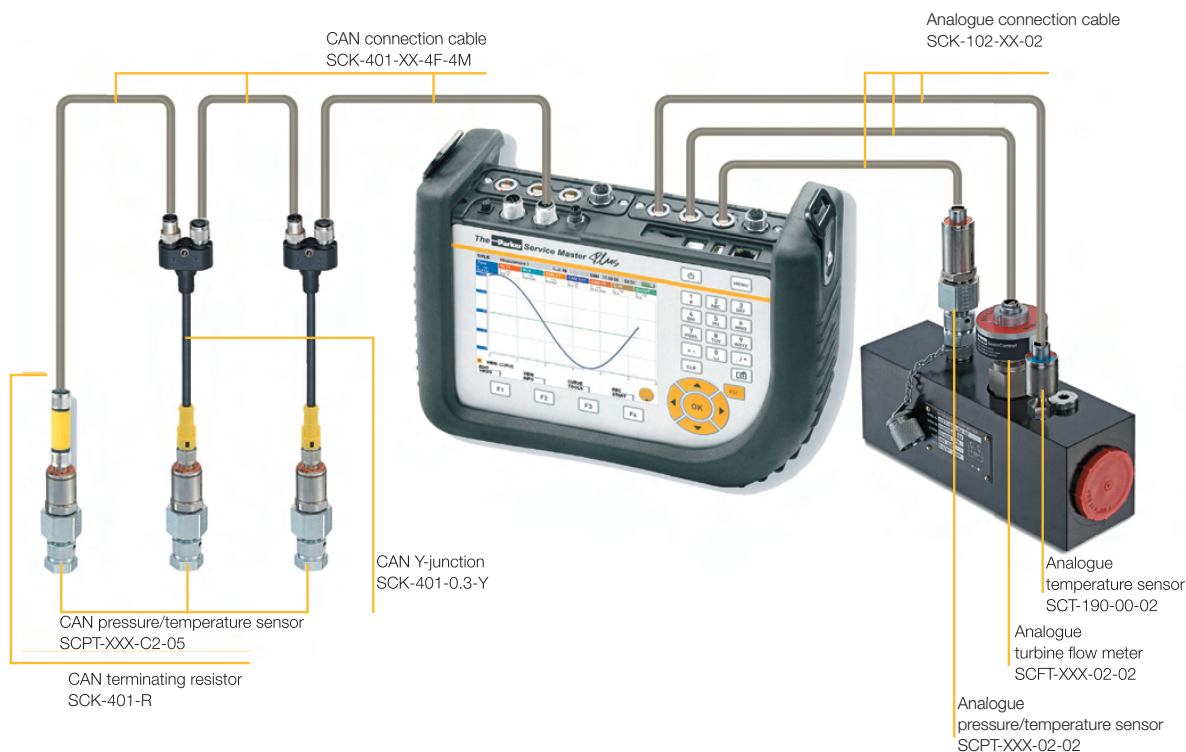
Housing protection
for use
in rough
conditions and
for shock
absorption

Large, 5.7" colour display
for a clear view of extensive
information

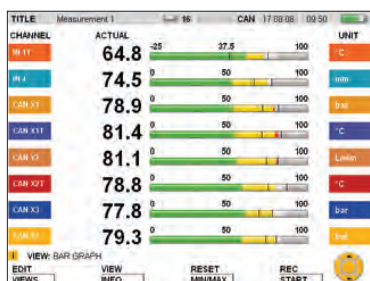
Intuitive operation with clear
control elements and keys dedicated
to specific functions



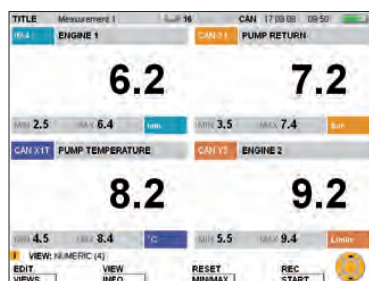
4 The Parker Service Master *Plus*



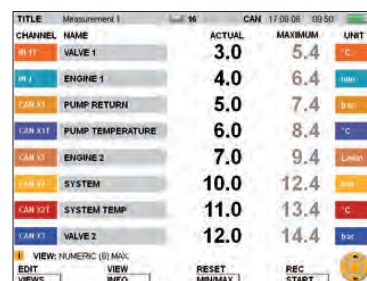
Measuring devices



- Display of measured values as numeric and bar graph
- Alarm ranges shown in green, yellow and red
- Trailing indicator for MIN and MAX values



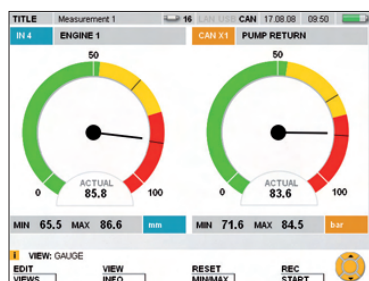
- Up to 4 channels in one large-format display
- Simultaneous display of ACT, MIN and MAX values
- Information line for current settings, events and views
- Individual measurement channel identifier



- Up to 8 channels in one display
- Colour coding of the individual channels
- Uniform headings with measurement titles, sensors connected, interfaces, date, time and battery condition display
- Display can be changed between MIN and MAX values as well as full scale



- Up to 8 channels in one graph
- Detailed, precise graph thanks to high-definition display
- Choice between ACT and MIN/MAX value display
- Automatic and manual scaling of the time axis for optimum measured value display



- Large gauge display of measured values
- Trailing indicator for MIN and MAX values
- Alarm range in green, yellow and red
- Further channels can be accessed with the arrow keys



4 The Parker Service Master *Plus*

Technical data

	The Parker Service Master <i>Plus</i> – basic device SCM-500-00-00
Inputs/outputs	
CAN sensor inputs	2 CAN bus networks of 8 Parker CAN bus sensors each
Scanning rate	1 ms = 1,000 measured values/s
Plug connection	M12x1, 5 pin with SPEEDCON®, push-in connector
1 digital trigger input	Isolated
Scanning rate	1 ms
Input impedance	1 kOhm
Active high	> +7 VDC...+24 VDC
Active low	< 1 VDC
1 digital trigger output	Isolated
Output signal	+24 VDC/max. 20 mA
Plug-in connector for digital input and output	M8x1, 4 pin, connector
Module slots	2, for input modules, flexible placement possible
Slot 1	IN1, IN2, IN3, IN4/5
Slot 2	IN6, IN7, IN8, IN9/10
Display	
Type	FT-LC colour graphic display
Visible area	115 x 86 mm
Resolution	640 x 480 pixels
Interfaces	
USB device	Online data transfer between device and PC via PC software SensoWin®
Measured value transfer	ACT/MIN/MAX
USB standard	2.0, full speed
Plug connection	USB port, shielded, type B
USB host	Connection for mass storage devices such as USB stick or external hard disc
Standard	2.0, full speed, max. 100 mA
Plug connection	USB port, shielded, type A
Ethernet	Online data transfer between device and PC via PC software SensoWin® and remote control (CERDISP)
Measured value transfer	ACT/MIN/MAX
Standard	10, 100 MBit/s, IEEE 802.3 (10/100BaseT)
Plug connection	RJ45, port, shielded
Functions	
Measuring	ACT, MIN and MAX values
Display of measured values	Numeric, bar graphs, gauge, curve
Measuring functions	Start/stop, points, triggers
Triggers	Flank, manual, level, window, time, logic (linkage of up to two events for start and stop of measuring) Pre-trigger
Other functions	Remote operation via Ethernet Acoustic notification of any incident
SPEEDCON® is a registered trademark of PHOENIX CONTACT GmbH & Co. KG	



4 The Parker Service Master *Plus*

	The Parker Service Master <i>Plus</i> – basic device SCM-500-00-00
Measured value storage	For storing measured values, project data and screenshots
Storage capacity	≤ 4 million measured values per measurement
Total measured value storage	> 1 billion measured values
Storage format	ACT, MIN, MAX
Storage interval	1 ms to 24 h
Storage duration	1 ms to 300 h (trigger measurement)
Internal memory	64 MB (approx. 32 million measured values)
External: SD memory	with microSD memory-card slot (2 GB microSD memory card included in supply package)
External: USB mass storage device	40 GB
Ambient conditions	
Ambient temperature	0...+50 °C
Storage temperature	-25...+60 °C
Rel. humidity	< 80 %
Environmental impact test	IEC60068-2-32 (1 m, free fall)
Type of protection	IP64 EN 60529
External power supply	110/240 VAC - 24 VDC/2500 mA Car adapter cable as accessory (12/24 VDC)
Rechargeable battery	
Type	Lithium ion pack, +7.4 VDC/4500 mAh
Battery charging connection/ operating time	> 8 h with 3 CAN sensors
Material	
Housing	ABS/PC (thermoplastic)
Housing protective cover (included in supply package)	TPE (thermoplastic elastomer)
Dimensions (W x H x D)	257 mm x 181 mm x 87 mm
Weight	1,550 g (basic version)



4 The Parker Service Master *Plus*

Measuring devices

	The Parker Service Master <i>Plus</i> – input module type 01
Inputs with sensor recognition	3 sensor inputs (up to 6 analogue measurement channels) With sensor recognition (p/T/Q/n) for SensoControl® diagnostic sensors Also connection of external sensors possible with SCMA-VADC Push-in connection: 5-pin, push-pull, combination panel plug/socket Scanning rate: 1 ms = 1,000 measured values/sec. For the SCPT combined pressure & temperature sensor, there is an additional temperature channel for each sensor input Temperature scanning rate: 30 ms
Inputs for auxiliary sensors	2 analogue sensor inputs For measuring current and voltage Scanning rate: 1 ms = 1,000 measured values/sec. Voltage measuring range: -10...+10 VDC (freely configurable) Current measuring range: 0/4...20 mA Supply of external sensors: +18...+24 VDC/max. 100 mA Push-in connection: M12x1, 5-pin socket FAST MODE Scanning rate: 0.1 ms = 10,000 measured values/s Only one external sensor input of the module is useable (IN4/IN9)
Accuracy	±0.25 % FS + 0.02 % per °C



4 The Parker Service Master *Plus*

Supply range and accessories

Product overview				Included in the supply package:
	CAN sensor inputs	Sensor inputs with sensor recognition (analogue)	External sensor inputs (analogue)	
SCM-500-00-00 (basic device without input module)	2 networks, each with max. 8 sensors	0	0	<ul style="list-style-type: none"> - Installed hand grip - 24VDC/2.5A power supply unit incl. country adapter - Plug for digital trigger input/output (M8x1, 4 pin) - USB 2.0 cable (2 m) - LAN cable (5 m) - Operating instructions - PC software - 2 GB microSD memory card
SCM-500-01-00 (basic device with 1 input module, type 01)	2 networks, each with max. 8 sensors	3	2	
SCM-500-01-01 (basic device with 2 input modules, type 01)	2 networks, each with max. 8 sensors	6	4	

Accessories		Order code
Power supply	110/240 VAC with country adapters: EUR/UK/US/AUS	SCSN-460
Car cable adapter	12/24 VDC	SCK-318-05-21
Neck strap		SC-ACC-01
M8x1 plug	for digital trigger input/output	SCK-009
M12x1 plug	for external sensor inputs	SCK-401-4M

The Parker Service Master <i>Plus</i> kits	Order code		
	SCKIT-500-00-00	SCKIT-500-01-00	SCKIT-500-01-01
Equipment case SCC-500	1	1	1
The Parker Service Master <i>Plus</i>	SCM-500-00-00	SCM-500-01-00	SCM-500-01-01
Neck strap SC-ACC-01	1	1	1
Connection cable CAN SCK-401-05-4F-4M	2	2	2
CAN terminating resistor SCK-401-R	2	2	2
3-m connection cable SCK-102-03-02	—	2	3
5-m connection cable SCK-102-05-02	—	1	3
Adapter (M16x2 male - M16x2 male) SCA-EMA-3/3	2	2	2
External sensor adapter SCK-401-4M	—	1	2
Test hose, 1,500 mm (M16x2) SMA3-1500	2	2	2
Please order further accessories/sensors separately			

The Parker Service Master <i>Plus</i> with calibration certificate as per ISO 9001		Order code
The Parker Service Master <i>Plus</i>	with 1 input module, type 01	K-SCM-500-01-00
The Parker Service Master <i>Plus</i>	with 2 input modules, type 01	K-SCM-500-01-01
The Parker Service Master <i>Plus</i> kit	with 1 input module, type 01	K-SCKIT-500-01-00
The Parker Service Master <i>Plus</i> kit	with 2 input modules, type 01	K-SCKIT-500-01-01



5 PC software SensoWin®

PC software SensoWin®

- Easy operation
- Compatible with Windows 2000/XP/VISTA/7 (32 and 64-bit)
- Zoom functions
- Linking of measuring curves
- Tabular listing of measured values
- Calculation of extreme value
- Cursor functions
- Transmission of setting parameters of the measuring devices
- Automation of measurement procedure and documentation print-out
- Export function
- Online measurement



General

The PC software **SensoWin®** is an easy to operate software package for reading and processing the measured curves recorded by the **Parker Serviceman Plus**, **The Parker Service Master Easy**, or **The Parker Service Master Plus**. Documentation and certificates can be created easily and at low cost since the PC software **SensoWin®** can make use of all Windows features and advantages.

Functions

The curves can be represented in a diagram. The curve shifting function allows exact hydraulics analysis. A power performance curve can be created to evaluate a pump.

Leaks and pressure losses can be detected by generating a differential value function.

With the cursor, a hydraulic procedure can be examined in a time-dependent way. For each curve, extensive

information is provided. This means measurements made with the **Parker Serviceman Plus**, **The Parker Service Master Easy** or **The Parker Service Master Plus** can be reproduced at any time. Changing scales and units allows later adjustment for presentation in a diagram. Tabular representation of ACT, MIN and MAX values, smoothing of the measurement curve and mathematical links are important functions in the analysis of the hydraulic system.

Date and time are documented with each measurement. This considerably facilitates the later allocation of values. Direct transmission of measured values from the **Parker Serviceman Plus**, **The Parker Service Master Easy** or **The Parker Service Master Plus** to the PC is also possible.

Current events (pressure peaks, etc.) are visible while the process is running (online function).



5 PC software SensoWin®

Technical data

PC software SensoWin®		Parker Serviceman Plus	The Parker Service Master Easy	The Parker Service Master Plus
Numeric, bar graph, gauge, curve display		●	●	●
Simultaneous display of 16 channels		●	●	●
Oscilloscope / trigger display		—	—	●
Zoom function		●	●	●
Calculate function		●	●	●
Analyse function		●	●	●
Extended cursor function (displays X values and corresponding Y values)		●	●	●
Connection via:	USB	●	●	●
	Ethernet	—	—	●
Online measured-value display		●	●	●
Online measured-value memory		●	●	●
Projects can be saved		—	●	●
Excel export		●	●	●
Measurement procedure can be automated (auto-sequence control)		●	●	●

— not available

● Included

Measuring devices



6 Test kit SCJN

Test Kit SCJN

- Easy generation of pressures for testing and adjusting:
 - Pressure meters
 - Pressure sensors
 - Pressure switches
 - Safety valves
- Also suitable for mobile use
- Pneumatic version from -0.95 - 60 bar and hydraulic version from 0 - 700 bar
- No additional power supply necessary
- Includes large set of adapters



Hand pump + reference = test kit

Whether in industry, mobile hydraulics, service or repair: the pressure value is decisive for ensuring the functioning and productivity of machines and plant. The pressure transmitters, sensors and pressure switches used here can suffer from aging, wear or other influences, leading to incorrect measured values or switching points.

The ServiceJunior Test kit makes it easy to test manometers and pressure sensors, set pressure switches and more. The kit consists of a hydraulic or pneumatic hand pump used to generate a defined test pressure, plus a Service Junior as the reference device. Air, water or oil is used as the pressure medium.

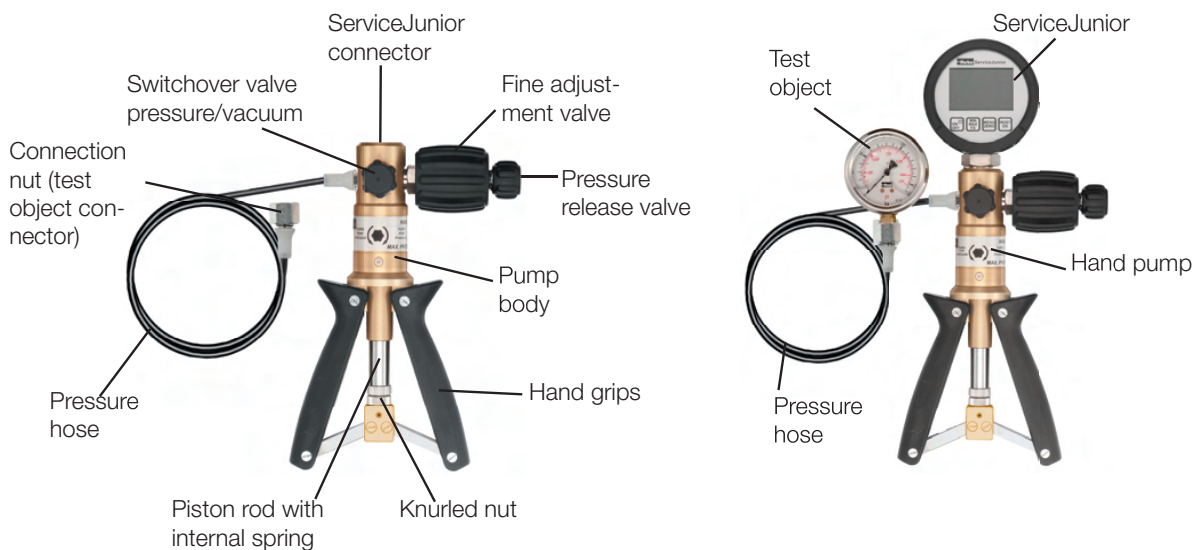
Simply connect the unit to be tested to the hand pump. The connection hose and a large set of adapters are included in the supply package.

The required test pressure is generated by pumping and precisely set using the regulating valve. The practice-proven ServiceJunior acts as a reference and pressure display with an accuracy of up to 0.1 %. Compare the test object reading to the ServiceJunior display and adjust or correct as needed.



6 Test kit SCJN

Function specifications



Pressure measurements

1. Connect test object to pressure hose using suitable adapter.
2. Create test pressure by pressing the hand grips together.
3. Precisely set the test pressure using the fine adjustment valve.
4. If necessary, reduce test pressure using the pressure release valve.
5. Compare measured value of the test object with the reference value of the high-precision ServiceJunior.

Available versions

The SCJN test kit is available for two pressure ranges in two classes of accuracy:

Type	Pressure range	Accuracy reference
SCHP-KIT-060-02-01	- 0.95 ... 60 bar	± 0.1% of the measuring span
SCHP-KIT-060-03-01	- 0.95 ... 60 bar	± 0.25% of the measuring span
SCHP-KIT-700-02-01	0 ... 700 bar	± 0.1% of the measuring span
SCHP-KIT-700-03-01	0 ... 700 bar	± 0.25% of the measuring span

Further pressure ranges available on request



6 Test kit SCJN

Technical data

	SCHP-KIT-060-xx-01	SCHP-KIT-700-xx-01
Hand pump with pressure hose		
Pressure range	- 0.95 ... 60 bar	0 ... 700 bar
Pressure medium	Air	Hydraulic oil (-10 ... 60 °C, non-freezing)* or demineralised water (0 ... 60 °C, non-freezing)
Connection to ServiceJunior	G ¼	G ¼
Connection to test object	Pressure hose (1 m) with connection nut G ¼"	M16x2 or measuring hose M16x2
Dimensions without ServiceJunior	approx. 240 x 170 x 50 mm	approx. 255 x 225 x 85 mm
Weight without ServiceJunior	approx. 1.1 kg	approx. 1.7 kg
Reference		
Measuring range	- 1 ... 60 bar	0 ... 700 bar
Overload pressure	120 bar	1,000 bar
Burst pressure	550 bar	2,000 bar
Accuracy (in % of hand pump)	SCHP-KIT-060-02-01: 0.1 % ±1 digit SCHP-KIT-060-03-01: 0.25 % ±1 digit	SCHP-KIT-700-02-01: 0.1 % ±1 digit SCHP-KIT-700-03-01: 0.25 % ±1 digit
Scanning rate	10 ms	10 ms
Process connection	G ¼" stainless steel, seal NBR	G ¼" stainless steel, seal NBR
Display	LC text display, 4.5 characters 50 x 34 mm Digit size 13.5 mm Back-lit display Units: bar, mbar, psi, kPa, Mpa, kg/cm² Bar graph (trailing indicator)	LC text display, 4.5 characters 50 x 34 mm Digit size 13.5 mm Back-lit display Units: bar, mbar, psi, kPa, Mpa, kg/cm² Bar graph (trailing indicator)
Functions	Display of MIN, MAX values Battery level display Auto Power Off (can be switched off) Zero (zero-point correction)	Display of MIN, MAX values Battery level display Auto Power Off (can be switched off) Zero (zero point correction)
Power supply	2 1.5 V batteries (AA)	2 1.5 V batteries (AA)
Ambient temperature	0 ... 50 °C	0 ... 50 °C
Storage temperature	- 20 ... + 60 °C	- 20 ... + 60 °C
Rel. humidity	< 85 %	< 85 %
Type of protection	IP 67 EN 60529	IP 67 EN 60529
Vibration resistance	IEC 60068-2-6/10 ... 500 Hz, 5 g	IEC 60068-2-6/10 ... 500 Hz, 5 g
Shock load	IEC 60068-2-29/25 g, 11 ms	IEC 60068-2-29/25 g, 11 ms
Weight	approx. 540 g	approx. 540 g

*Please observe instructions in the data sheets of the hydraulic oil used



6 Test kit SCJN

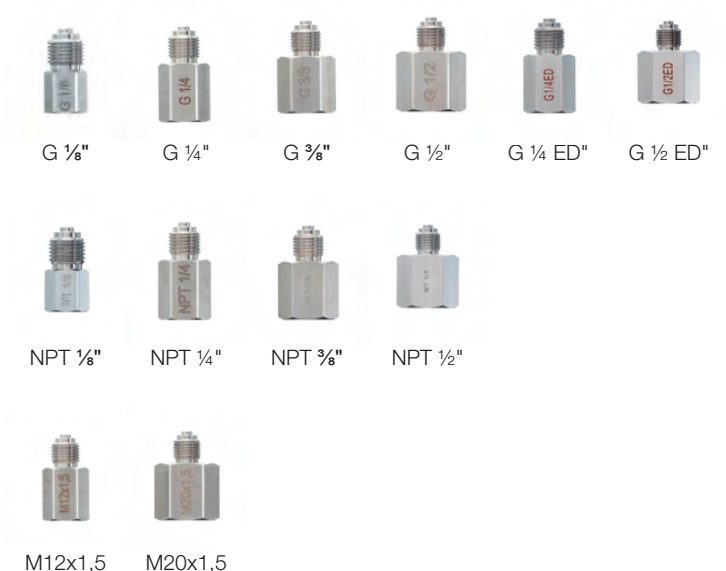
Supply range and accessories

Accessories/ spare parts included	SCHP-KIT-060	SCHP-KIT-700
Equipment case	SCC-400	SCC-410
Set of seals flat, plastic seals and O-rings	SCHP-SEALSET	SCHP-SEALSET
1-m connecting hose	SMA1/4MA-1/8M-1000BLCF	SCA-SMA3-1000-1/4MA71
Spray bottle	—	SCHP-SPFL-01
Adapter set stainless steel adapters G $\frac{1}{4}$ to: G $\frac{1}{8}$ ", G $\frac{1}{4}$ ", G $\frac{3}{8}$ ", G $\frac{1}{2}$ ", G $\frac{1}{4}$ ED", G $\frac{1}{2}$ ED", NPT $\frac{1}{8}$ ", NPT $\frac{1}{4}$ ", NPT $\frac{3}{8}$ ", NPT $\frac{1}{2}$ ", M12x1,5, M20x1,5, G $\frac{1}{8}$ A, G $\frac{1}{4}$ A	SCA-HP-KIT-01	SCA-HP-KIT-01

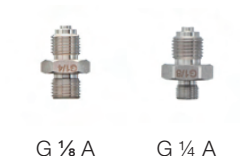
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Adapter set

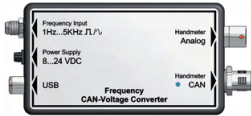



Reducers








Double nipples








Finding the best sensor

SCMA-FCU-600	SCMA-VADC-600	SCP analogue	SCP CAN
			
Frequency measurement	Current/voltage measurement	Pressure measurement	Pressure measurement
<ul style="list-style-type: none"> ✓ Analogue and CAN output ✓ 24V power supply for external sensors 	<ul style="list-style-type: none"> ✓ Connection of external sensors ✓ 24V power supply for external sensors 	<ul style="list-style-type: none"> ✓ Low height ✓ Stainless steel cell ✓ High burst pressure ✓ Resistant to pressure peaks 	<ul style="list-style-type: none"> ✓ Low height ✓ Stainless steel cell ✓ High burst pressure ✓ Resistant to pressure peaks ✓ CAN bus connection

SCPT analogue	SCPT CAN	SCT analogue	SCT CAN	SCRPM analogue
				
Pressure/temperature measurement	Pressure/temperature measurement	Temperature measurement even at higher operating pressures	Temperature measurement even at higher operating pressures	Contactless RPM (speed) measurement
<ul style="list-style-type: none"> ✓ Stainless steel cell ✓ High burst pressure ✓ Resistant to pressure peaks 	<ul style="list-style-type: none"> ✓ Stainless steel cell ✓ High burst pressure ✓ Resistant to pressure peaks ✓ CAN bus connection 	<ul style="list-style-type: none"> ✓ Unique resistance to pressures up to 630 bar ✓ Compact size 	<ul style="list-style-type: none"> ✓ Unique resistance to pressures up to 630 bar ✓ Compact size ✓ CAN bus connection 	<ul style="list-style-type: none"> ✓ Opto-electronic measurement ✓ No setting or adjustment necessary

Finding the best sensor

Turbine flow meter SCFT	Turbine flow meter SCFTT CAN	Hydraulic tester SCLV	SCQ Flow meter	Volume meter SCVF
				
Low-loss volume flow measurement	Low-loss volume flow measurement with integrated temperature sensor	Hydraulic tester in analogue and CAN versions	For quick flow changes Measures in both directions	Highly accurate flow measurement over a wide viscosity range
<ul style="list-style-type: none"> ✓ Response time ≤ 50 ms ✓ Multiple measuring ranges ✓ Low flow resistance ✓ Up to 750 l/min ✓ Up to 400 bar ✓ Reverse-mode operation 	<ul style="list-style-type: none"> ✓ Response time ≤ 50 ms ✓ Multiple measurement ranges ✓ Low flow resistance ✓ Up to 750 l/min ✓ Up to 400 bar ✓ Reverse-mode operation ✓ CAN bus connection 	<ul style="list-style-type: none"> ✓ Response time ≤ 50 ms ✓ Multiple measurement ranges ✓ Low flow resistance ✓ Up to 750 l/min ✓ Up to 400 bar ✓ Enables p-Q measurement ✓ Pressure load valve ✓ Overpressure safety valve 	<ul style="list-style-type: none"> ✓ Response time ≤ 2 ms ✓ Reverse-mode operation ✓ Wide range of viscosities ✓ Compact size ✓ Up to 315 bar 	<ul style="list-style-type: none"> ✓ High accuracy even with low volume flows ✓ 4 measuring ranges up to 300 l/min ✓ Flexible use with various fluids ✓ Low noise level

Finding the best sensor

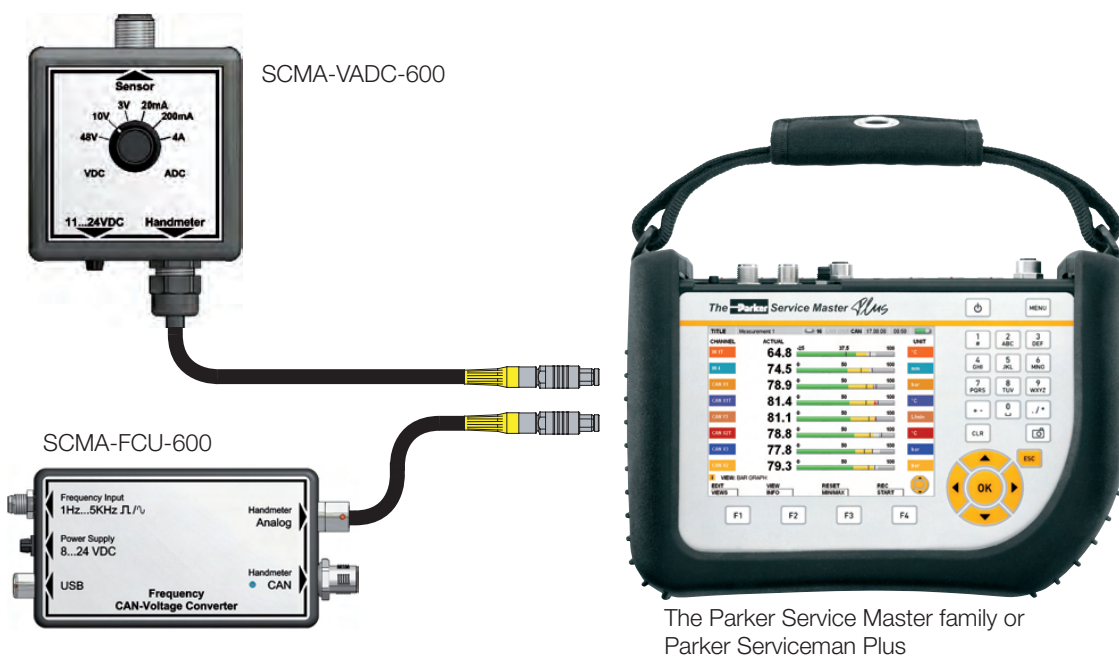
Sensor compatibility

	Parker Ser- viceman Plus SCM-155-0-02	Parker Ser- viceman Plus SCM-155-2-05	The Parker Ser- vice Master <i>Easy</i> SCM-330-2-02 SCM-340-0-02	The Parker Ser- vice Master <i>Plus</i> SCM-500-00-00	The Parker Ser- vice Master <i>Plus</i> SCM-500-01-00 SCM-500-01-01
SCMA-FCU-600	●	●	●	●	●
SCMA-VADC-600	●	—	●	—	●
SCP-xxx-74-02	●	—	● ¹⁾	—	● ²⁾
SCP-xxx-C4-05	—	●	—	●	●
SCPT-xxx-02-02	●	—	●	—	●
SCPT-xxx-C2-05		●		●	●
SCT-150-xx-02	●	—	●	—	●
SCT-190-0x-02	●	—	●	—	●
SCT-190-Cx-05	—	●	—	● ³⁾	● ³⁾
SCTA-400-02/ SCT-400-K-01	● ⁴⁾	—	● ⁴⁾	—	● ⁴⁾
SCRPM-220	●	—	●	—	●
SCFT-xxx-02-02	●	—	●	—	●
SCFTT-xxx-C2-05	—	●	—	● ³⁾	● ³⁾
SCLV-PTQ-xxx	●	—	●	—	●
SCLVT-PTQ-xxx-C2-05	—	●	—	●	●
SCQ-xxx-02-02	●	—	●	—	●
SCVF-xxx-00-02	●	—	●	—	●
1) 60 bar, 150 bar and 600 bar only with firmware version V01261 or higher 2) 60 bar, 150 bar and 600 bar only with firmware version g102 or higher 3) only with firmware version i102 or higher 4) Parametrize as auxiliary sensor					

- not available
● available

7 Electrical signal measurement

Electrical signal measurement



Measuring frequency with the SCMA-FCU-600

The SCMA-FCU-600 can be used to connect frequency signals (for example from turbines, flow counters or tachometers) to our handheld measuring devices. The instruments can process sinus and rectangle signals from 1 Hz to 5 kHz with signal amplitudes from 40 mV to 10 V. Configuration is possible via USB and PC software.

■ Power supply for the external sensor

An external sensor can be supplied with 24 V using the SCMA-FCU-600.

■ Analogue and CAN output

The SCMA-FCU-600 can be connected either to the analogue input or the CAN input of our measuring devices.

Measurement of external sensors with the SCMA-VADC-600

Signals such as 0/4...20 mA or 0...10 V from external sensors, (for example for torque, power or path) are connected to the The Parker Service Master.

Applications

- Force-path diagram
- Torque/flow volume nominal lines

■ Current/voltage measurement

Electric currents up to 4 ADC or voltages up to 48 VDC can be measured with this module.

Applications

- Current consumption of a proportional valve
- Measurement of switch status of motors/pumps

7 Electrical signal measurement

Technical data

	SCMA-FCU-600	SCMA-VADC-600	
External sensor port			
Measuring range	1 Hz...5 kHz, sinus and rectangle signals 40 mVpp...10 Vpp	Voltage DC ±3 V ±10 V ±48 V	Current DC ±20 mA ±200 mA ±4,000 mA
Sensor power supply	24 VDC ±0.5 VDC	24 VDC ±0.5 VDC	
IOut (Max) without power supply	50 mA	50 mA	
IOut (Max) with power supply at 24 VDC	100 mA	100 mA	
Accuracy	0.5 % FS ±0.05 %/°C	0.5 % FS ±0.02 %/°C 1.5 % FS at 4 A measuring range	
Power supply			
Power supply (external)	8 ...24 VDC	11 ...24 VDC	
Connections			
Sensor	4-pin, M8, plug (female with screw-in connections included in supply package)	4-pin, M12x1 , female (connection cable with banana jack included in supply package)	
External power supply	3-pin, female	3-pin, female	
USB	4 pin, female (cable included in supply pack- age)	-	
Analogue	5-pin, female	Fixed cable	
CAN	5 pin, M12	-	
Ambient conditions			
Ambient temperature	0 °C to 60 °C	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	-25 °C to 70 °C	
Rel. humidity	< 80 %	< 80 %	
Type of protection	IP40 EN 60529	IP40 EN 60529	
Housing dimensions	114 x 64 x 26 mm	67 x 68 x 28 mm	
FS = FullScale			

Pressure/temperature/RPM measurement

Pressure/temperature/RPM measurement

Various sensors are available depending on the measurement requirements.

Pressure sensors, type SCP

- Robust stainless steel design
- Response times of 1 ms
- Capturing of pressure peaks
- Accuracy $\pm 0.5\%$
- Diagnostic adapter

Pressure/temperature sensors, type SCPT

- Robust stainless steel design
- Response times of 1 ms
- Capturing of pressure peaks
- Accuracy $\pm 0.5\%$
- Diagnostic adapter

Temperature sensors, type SCT

- High-pressure-resistant temperature sensors for hydraulic measurements
- Measurement of temperatures of up to $1,000^{\circ}\text{C}$
- Screw-in or probe-type sensors

Tachometer, type SCRPM

- Contactless RPM (speed) measurement
- Measures up to 10,000 RPM
- With 3-meter fixed cable



8 Pressure measurement SCP analogue

Pressure meter SCP analogue

- Low height
- Robust stainless steel design
- Response times of 1 ms
- Capturing of pressure peaks
- Accuracy $\pm 0.5\%$



Fast response times guarantee the safe capture of pressure peaks in hydraulic systems. The robust stainless steel design allows a variety of applications, for example cooling water or pneumatics.

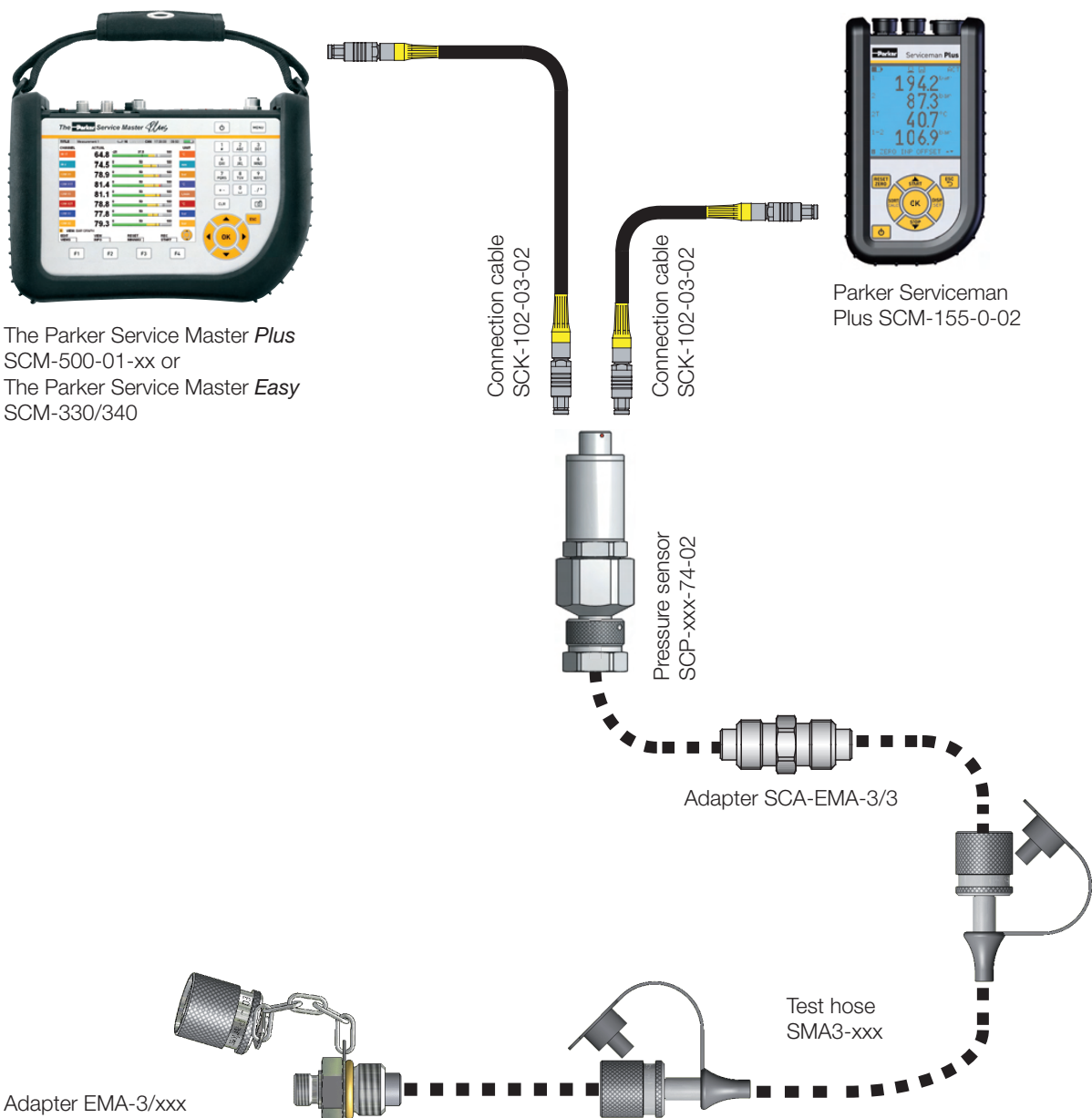
All pressure sensors are delivered with a diagnosis adapter (M16x2) installed. Fast and safe connection to the hydraulic system is ensured. Installation times are reduced.

Pressure measurements

-1 ... 015 bar	Pneumatics/low pressure
0 ... 060 bar	Medium pressure
0 ... 150 bar	Medium pressure
0 ... 400 bar	Operating pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1.000 bar	High pressure peaks

8 Pressure measurement SCP analogue

Function specifications



SCP pressure measurement

There is a selection of different measuring ranges for measuring pressure. Sensors can be used for pneumatic applications and also for measuring pressure peaks of up to 1,000 bar.

Diagnostic adapter

All pressure sensors are provided with a SCA-1/4-EMA-3 diagnostic adapter installed. The pressure sensors can be adapted to all standard measuring connections. They are ideal for quick and flexible diagnostic in hydraulic applications.



8 Pressure measurement SCP analogue

Technical data

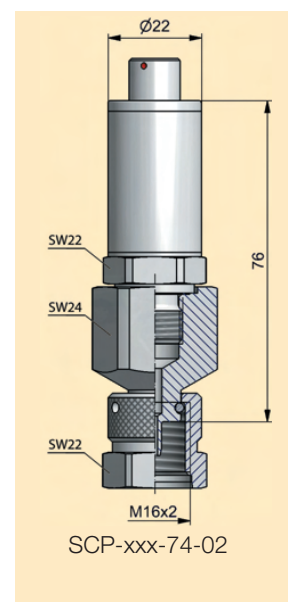
Type	SCP-015	SCP-060	SCP-150	SCP-400	SCP-600	SCP-1000
Measuring range (bar)	-1...015	0...060	0...150	0...400	0...600	0...1,000*
Overload pressure P _{max} (bar)	40	200	500	800	1,000	1,000
Burst pressure (bar)	60	1,000	2,000	2,000	2,000	2,000

*P_N of up to 630 bar, for pressure peaks of up to 1,000 bar

Accuracy		Ambient conditions	
Accuracy FS	± 0.5 % + 0.2 %/year	Ambient temperature (°C)	-25...+85
Response time	1 ms	Storage temperature (°C)	-20...+85
Connections		Media temperature (°C)	-25...+105
Electrical connection	5-pin connector	Reliability cycles	100 million
Process connection	1/4" BSPP	Shock load	50 g/11 ms IEC 60068-2-27
Material		Vibration resistance	20 g as per IEC 60068-2-6
Housing	Stainless steel		
Seal	FKM		
Weight	approx. 200 g		
Type of protection	IP54 EN 60529		

Supply range and accessories

SCP pressure sensor 1/4" BSPP male incl. adapter SCA-1/4-EMA-3	Order code
-1...015 bar/0...060 bar/0...150 bar/ 0...400 bar/0...600 bar/0...1,000 bar	SCP-xxx-74-02
SCP pressure sensor 1/4" BSPP male incl. adapter SCA-1/4-PQC	Order code
-1...015 bar/0...060 bar/0...150 bar/ 0...400 bar/0...600 bar	SCP-xxx-74-02-PQC
SCK analogue connection cable	Order code
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5-m extension cable (male 5 pin - female 5 pin)	SCK-102-05-12
SCP pressure sensor with calibration certificate as per ISO 9001	Order code
SCP pressure sensor incl. adapter SCA-1/4-EMA-3	K-SCP-xxx-74-02
SCP pressure sensor incl. adapter SCA-1/4-PQC	K-SCP-xxx-74-02-PQC



9 Pressure measurement SCP CAN

Pressure measurement SCP CAN

- Low height
- Robust stainless steel design
- Response times of 1 ms
- Capturing of pressure peaks
- Accuracy $\pm 0.5\%$
- Quick-plug-screw connection SPEEDCON®
- Sensor identification LED
- Suitable for long cables



All the advantages of the analogue SCP sensors are combined with state-of-the-art CAN bus technology. Simple wiring with the SPEEDCON® quick-plug-screw connection. Plug-&-Play functionality cuts configuration effort.

All pressure sensors are delivered with a diagnosis adapter (M16x2) installed. Fast and safe connection to the hydraulic system is ensured. Installation times are reduced.

Pressure measurement	
-1 ... 016 bar	Pneumatics/ low pressure
0 ... 060 bar	Medium pressure
0 ... 160 bar	Medium pressure
0 ... 400 bar	Operating pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1,000 bar	High pressure peaks

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9 Pressure measurement SCP CAN

Function specifications



The Parker Service Master *Plus*
SCM-500-xx-xx

Connection cable
SCK-401-02-4F-4M



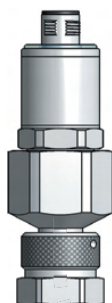
Connection cable
SCK-401-02-4F-4M



Parker Serviceman
Plus SCM-155-2-05

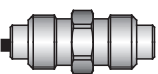


Terminating
resistor
SCK-401-R



Pressure sensor
SCP-xxx-C4-05

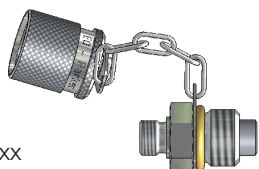
Adapter SCA-EMA-3/3



Test hose
SMA3-xxx



Adapter EMA-3/xxx



Pressure meter SCP

There is a selection of different measuring ranges for measuring pressure. Sensors are available for pneumatic applications and also for measuring pressure peaks up to 1,000 bar.

Diagnostic adapter

All pressure sensors are delivered with an SCA-1/4-EMA-3 diagnostic adapter installed. The pressure sensors can be adapted to all standard measuring connections. They are ideal for quick and flexible diagnostic in hydraulic applications.



9 Pressure measurement SCP CAN

Technical data

Type	SCP-016	SCP-060	SCP-160	SCP-400	SCP-600	SCP-1000
Measuring range (bar)	-1...016	0...060	0...160	0...400	0...600	0...1,000*
Overload pressure P _{max} (bar)	32	120	320	800	1,000	1,000
Burst pressure (bar)	160	550	1,000	1,700	2,000	2,000

*PN of up to 630 bar, for pressure peaks of up to 1,000 bar

Accuracy		Ambient conditions	
Accuracy FS	± 0.5 % + 0.2 %/year	Ambient temperature (°C)	-25...+85
Response time	1 ms	Storage temperature (°C)	-25...+85
Connections		Media temperature (°C)	-25...+105
Electrical connection	M12, 5 pin	Reliability cycles	100 million
Process connection	1/4" BSPP	Shock load	50 g/11 ms IEC 60068-2-27
Material		Vibration resistance	20 g IEC 60068-2-6
Housing	Stainless steel		
Seal	FKM		
Weight	approx. 195 g		
Type of protection	IP67 EN 60529		

Supply range and accessories

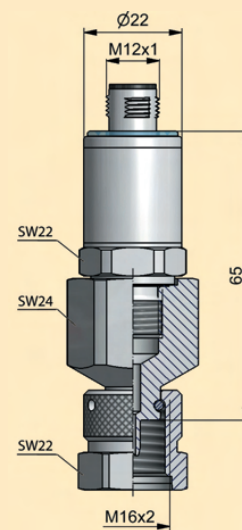
SCP pressure sensor CAN 1/4" BSPP male incl. adapter SCA-1/4-EMA-3	Order code
-1...016 bar/0...060 bar/0...160 bar/0...400 bar/ 0...600 bar/0...1,000 bar	SCP-xxx-C4-05

SCP pressure sensor CAN 1/4" BSPP male incl. adapter SCA-1/4-PQC	Order code
-1...016 bar/0...060 bar/0...160 bar/0...400 bar/0...600 bar	SCP-xxx-C4-05-PQC

SCK connection cables CAN*	Order code
0.5 m (male 5 pin - female 5 pin)	SCK-401-0.5-4F-4M
2 m (male 5 pin - female 5 pin)	SCK-401-02-4F-4M
5 m (male 5 pin - female 5 pin)	SCK-401-05-4F-4M
10 m (male 5 pin - female 5 pin)	SCK-401-10-4F-4M
20 m (male 5 pin - female 5 pin)	SCK-401-20-4F-4M
CAN Y-junction	SCK-401-Y
CAN Y-junction incl. 0.3-m cable	SCK-401-0.3-Y
CAN T-junction	SCK-401-T
Terminating resistor** CAN (female 5 pin - female 5 pin)	SCK-401-R

* Other lengths available on request
** Each CAN network requires a terminating resistor.

SCP pressure sensor CAN with calibration certificate as per ISO 9001	Order code
SCP pressure sensor CAN incl. adapter SCA-1/4-EMA-3	K-SCP-xxx-C4-05
SCP pressure sensor CAN incl. adapter SCA-1/4-PQC	K-SCP-xxx-C4-05-PQC



SCP-xxx-C4-05

Sensors

10 Pressure/temperature measurement SCPT analogue

Pressure/temperature measurement SCPT analogue

- Robust stainless steel design
- Response times of 1 ms
- Capturing of pressure peaks
- Accuracy $\pm 0.5\%$



Fast response times guarantee the safe capture of pressure peaks in hydraulic systems. The robust stainless steel design allows a variety of applications, for example cooling water or pneumatics.

All pressure sensors are delivered with a diagnostic adapter (M16x2) installed. Fast and safe connection to the hydraulic system is ensured. Installation times are reduced.

Pressure measurements

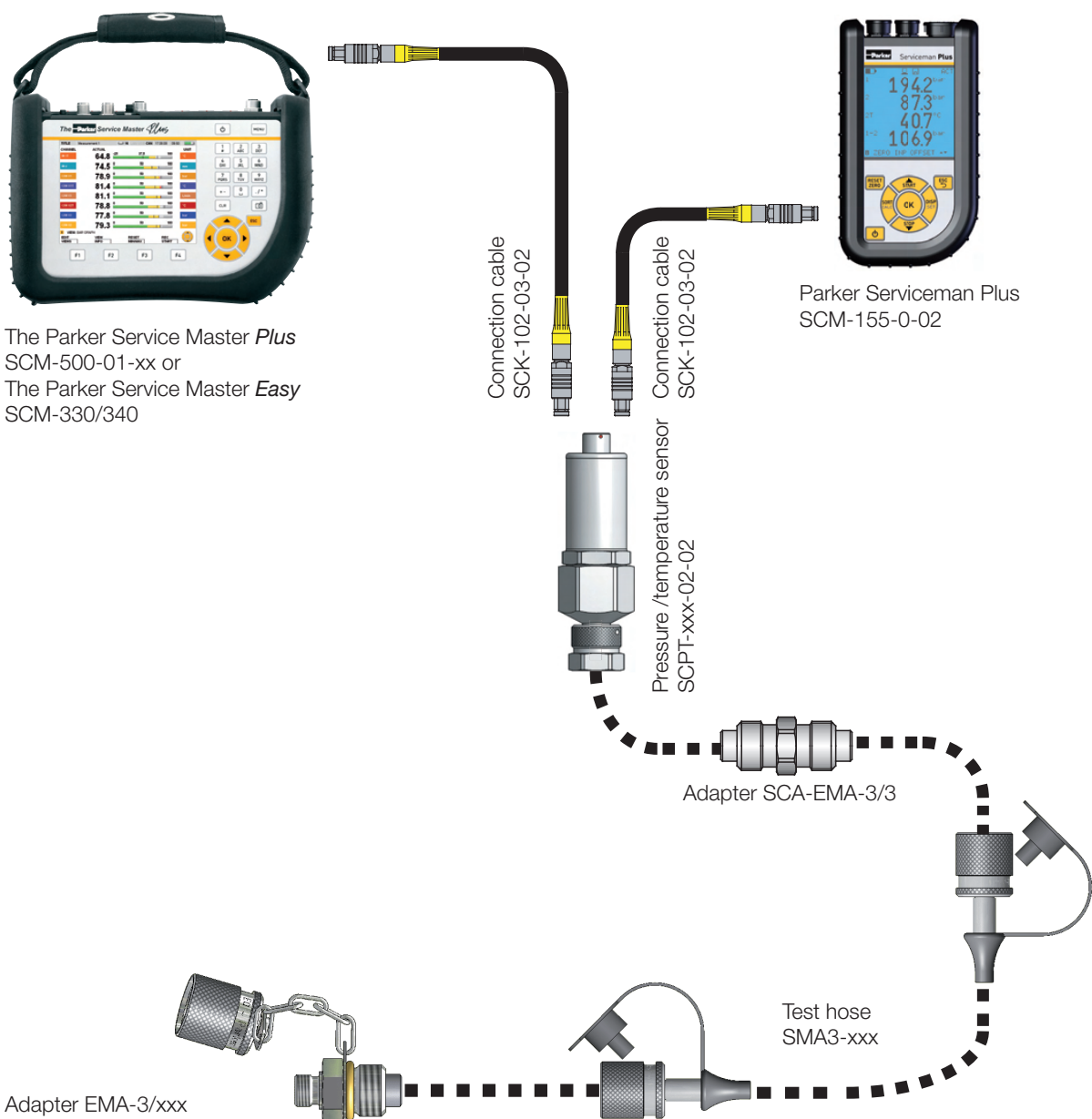
-1 ... 015 bar	Pneumatics/ low pressure
0 ... 060 bar	Medium pressure
0 ... 150 bar	Medium pressure
0 ... 400 bar	Operating pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1,000 bar	High pressure peaks

Temperature measurements

-25...+105 °C	Temperature
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10 Pressure/temperature measurement SCPT analogue

Function specifications



Pressure/temperature measurement SCPT

There is a selection of different measuring ranges for pressure measurement. Sensors can be used for pneumatic applications and also for measuring pressure peaks of up to 1,000 bar.

Diagnostic adapter

All pressure/temperature sensors are delivered with an SCA-1/2-EMA-3 diagnostic adapter installed. The sensors can be adapted to all standard measuring connections. They are ideal for quick and flexible diagnostic in hydraulic applications.



10 Pressure/temperature measurement SCPT analogue

Technical data

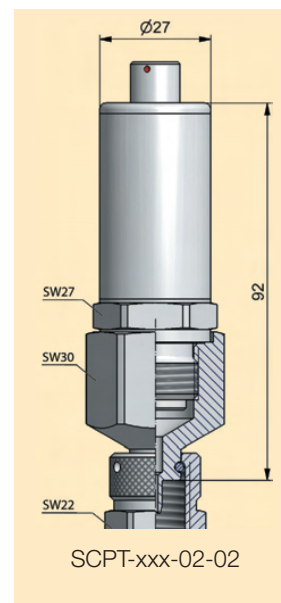
Type	SCPT-015	SCPT-060	SCPT-150	SCPT-400	SCPT-600	SCPT-1000
Measuring range (bar)	-1...015	0...060	0...150	0...400	0...600	0...1,000*
Overload pressure P _{max} (bar)	32	120	320	800	1,000	1,000
Burst pressure (bar)	180	550	1,000	1,200	2,000	2,000
Temperature measuring range (°C) Accuracy ± 3 K	-25...+105	-25...+105	-25...+105	-25...+105	-25...+105	-25...+105

*PN of up to 630 bar, for pressure peaks of up to 1,000 bar

Accuracy		Ambient conditions	
Accuracy FS	max. ±0.5 % + 0.2 %/year	Ambient temperature (°C)	-20...+85
Response time	1 ms	Storage temperature (°C)	-25...+125
Connections		Media temperature (°C)	-25...+105
Electrical connection	5 pin plug connection	Reliability cycles	100 million
Process connection	1/2" BSPP	Shock load	50 g/11 ms IEC 60068-2-29
Material		Vibration resistance	20 g IEC 60068-2-6
Housing	Stainless steel		
Seal	FKM		
Weight	approx. 320 g		
Type of protection	IP54 EN 60529		

Supply range and accessories

SCPT pressure/temperature sensor 1/2" BSPP male incl. adapter SCA-1/2-EMA-3	Order code
-1...015 bar/0...060 bar/0...150 bar/ 0...400 bar/0...600 bar/0...1,000 bar	SCPT-xxx-02-02
SCPT pressure/temperature sensor 1/2" BSPP male incl. adapter SCA-1/2-PQC	Order code
-1...015 bar/0...060 bar/0...150 bar/ 0...400 bar/0...600 bar	SCPT-xxx-02-02-PQC
SCK analogue connection cable	Order code
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5-m extension cable (male 5 pin - female 5 pin)	SCK-102-05-12
SCPT pressure/temperature sensor with calibration certificate as per ISO 9001	Order code
SCPT pressure/temperature sensor incl. adapter SCA-1/2-EMA-3	K-SCPT-xxx-02-02
SCPT pressure/temperature sensor incl. adapter SCA-1/2-PQC	K-SCPT-xxx-02-02-PQC



11 Pressure/temperature measurement SCPT CAN

Pressure/temperature measurement SCPT CAN

- Robust stainless steel design
- Response times of 1 ms
- Capturing of pressure peaks
- State-of-the-art CAN bus technology
- Simple wiring with SPEEDCON®
- Sensor identification LED
- Suitable for long cables
- Accuracy ±0.5 %



All the advantages of the analogue SCPT sensors are combined with state-of-the-art CAN bus technology. Simple wiring with SPEEDCON® quick-plug-screw connection.Plug-&-Play functionality cuts configuration effort.

All pressure sensors are delivered with a diagnostic adapter (M16x2) installed. Fast and safe connection to the hydraulic system is ensured. Installation times are reduced.

Pressure measurements	
-1 ... 016 bar	Pneumatics/ low pressure
0 ... 060 bar	Medium pressure
0 ... 160 bar	Medium pressure
0 ... 400 bar	Operating pressure hydraulics
0 ... 600 bar	High pressure
0 ... 1,000 bar	High pressure peaks
Temperature measurements	
-25...+105 °C	Temperature

Sensors

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11 Pressure/temperature measurement SCPT CAN

Technical data

Type	SCPT-016	SCPT-060	SCPT-160	SCPT-400	SCPT-600	SCPT-1000
Measuring range (bar)	-1...016	0...060	0...160	0...400	0...600	0...1,000*
Overload pressure Pmax (bar)	32	120	320	800	1,000	1,000
Burst pressure (bar)	160	550	1,000	1,700	2,000	2,000
Temperature measuring range (°C) Accuracy ± 3 K	-25...+105	-25...+105	-25...+105	-25...+105	-25...+105	-25...+105

*PN of up to 630 bar, for pressure peaks of up to 1,000 bar

Accuracy		Ambient conditions	
Accuracy	± 0.5 % + 0.2 %/year	Ambient temperature (°C)	-25...+85
Response time	1 ms	Storage temperature (°C)	-25...+85
Connections		Media temperature (°C)	-25...+105
Electrical connection	5 pin, M12x1, connector	Reliability cycles	100 million
Process connection	1/2" BSPP	Shock load	50 g/11 ms IEC 60068-2-29
Material		Vibration resistance	20 g IEC 60068-2-6
Housing	Stainless steel		
Seal	FKM		
Weight	200 g		
Type of protection	IP67 EN 60529		

11 Pressure/temperature measurement SCPT CAN

Supply range and accessories

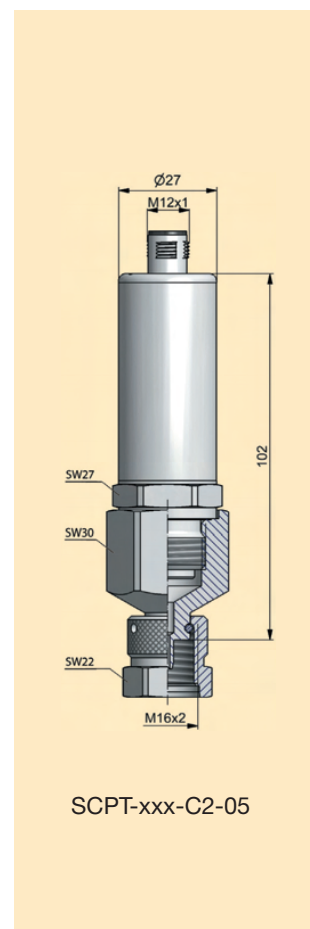
SCPT pressure/temperature sensor CAN 1/2" BSPP male incl. adapter SCA-1/2-EMA-3	Order code
-1...016 bar/0...060 bar/0...160 bar/ 0...400 bar/0...600 bar/0...1,000 bar	SCPT-xxx-C2-05

SCPT pressure/temperature sensor 1/2" BSPP male incl. adapter SCA-1/2-PQC	Order code
-1...016 bar/0...060 bar/0...160 bar/ 0...400 bar/0...600 bar	SCPT-xxx-C2-05-PQC

SCK connection cables CAN*	Order code
0.5 m (male 5 pin - female 5 pin)	SCK-401-0.5-4F-4M
2 m (male 5 pin - female 5 pin)	SCK-401-02-4F-4M
5 m (male 5 pin - female 5 pin)	SCK-401-05-4F-4M
10 m (male 5 pin - female 5 pin)	SCK-401-10-4F-4M
20 m (male 5 pin - female 5 pin)	SCK-401-20-4F-4M
CAN Y-junction	SCK-401-Y
CAN Y-junction incl. 0.3-m cable	SCK-401-0.3-Y
CAN T-junction	SCK-401-T
Terminating resistor** CAN (female 5 pin - female 5 pin)	SCK-401-R

* Other lengths available on request
 ** Each CAN network requires a terminating resistor.

SCPT pressure/temperature sensor CAN with calibration certificate as per ISO 9001	Order code
SCPT pressure/temperature sensor CAN incl. adapter SCA-1/2-EMA-3	K-SCPT-xxx-C2-05
SCPT pressure/temperature sensor CAN incl. adapter SCA-1/2-PQC	K-SCPT-xxx-C2-05-PQC



Sensors

12 Temperature measurement SCT analogue

Temperature measurement SCT analogue

- High-pressure-resistant temperature sensors
- For measuring temperatures up to 1,000°C
- Flexible operation
- Inline or probe-type sensor



In hydraulics, temperature measurements serve to locate faults and avoid the kind of damage caused by excessive temperatures in critical parts such as pumps and proportional valves.

To obtain the exact temperature, the measurement is done directly in the tube or hose line.

The inline sensors from the SCT-190 series can also be used in the turbine flow meters SCFT-xxx-02-02 to measure temperatures.

12 Temperature measurement SCT analogue

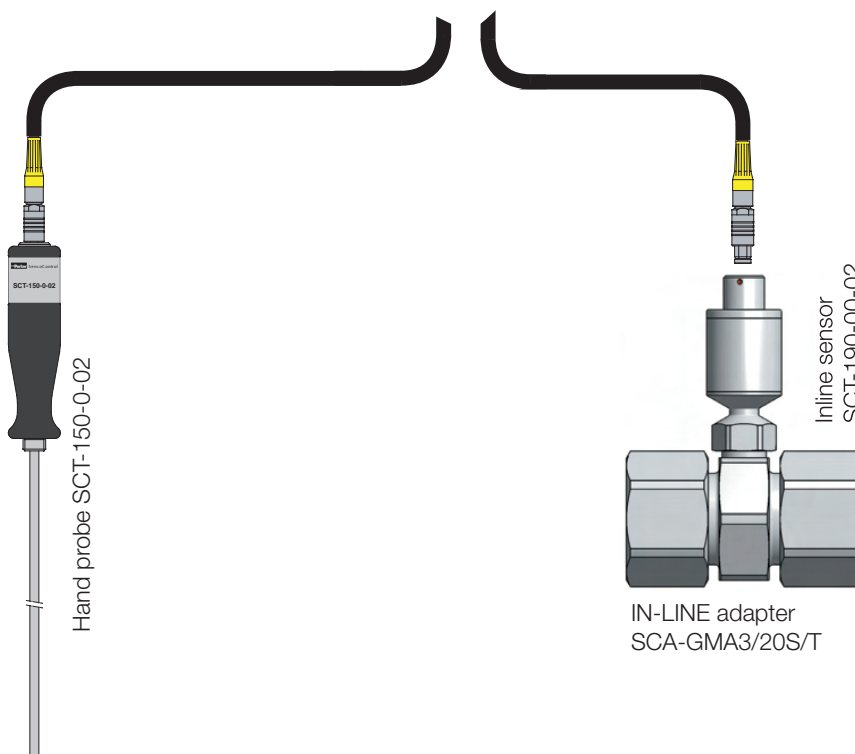
Function specifications



The Parker Service Master *Plus*
SCM-500-01-xx or
The Parker Service Master *Easy*
SCM-330/340



Parker Serviceman
Plus SCM-155-0-02



Hand probe SCT-150-0-02

Inline sensor
SCT-190-00-02

IN-LINE adapter
SCA-GMA3/20S/T

Sensors

Hand probe SCT-150 (-25 °C...+125 °C)

Temperatures in tanks and containers are measured with the hand probe SCT-150-0-02

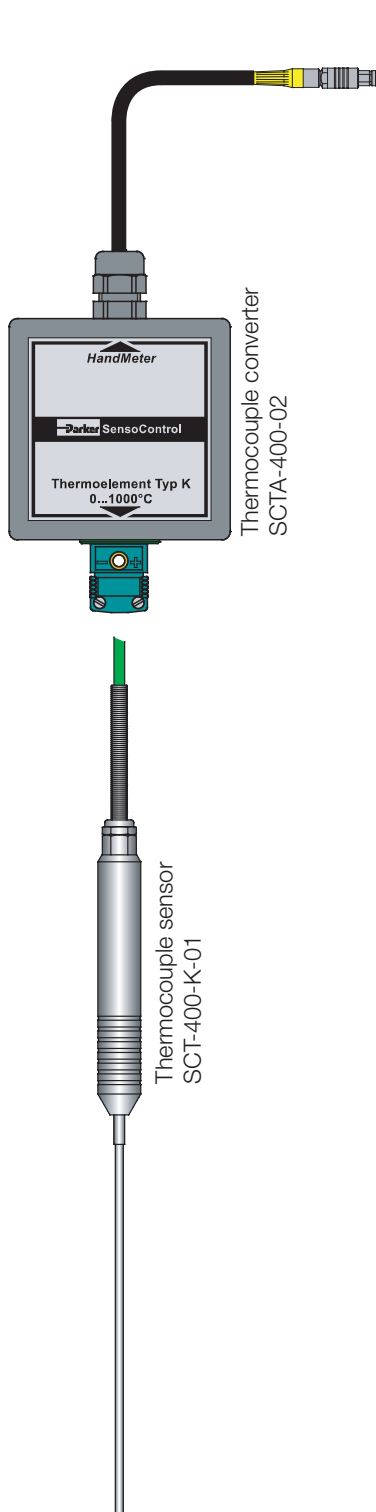
Inline sensor SCT-190 (-40 °C...+150 °C)

The inline sensor SCT-190-00-02 can be adapted to the hydraulic system up to a system pressure of 630 bar. The male stud is compatible with the measuring connections of the GMA3/20 series and with the turbine flow meter SCFT-xxx.



12 Temperature measurement SCT analogue

Function specifications



The Parker Service Master *Plus*
SCM-500-01-xx or
The Parker Service Master *Easy*
SCM-330/340

Sensors

Thermocouple sensor SCT-400-K-01 with thermocouple converter SCTA-400-02

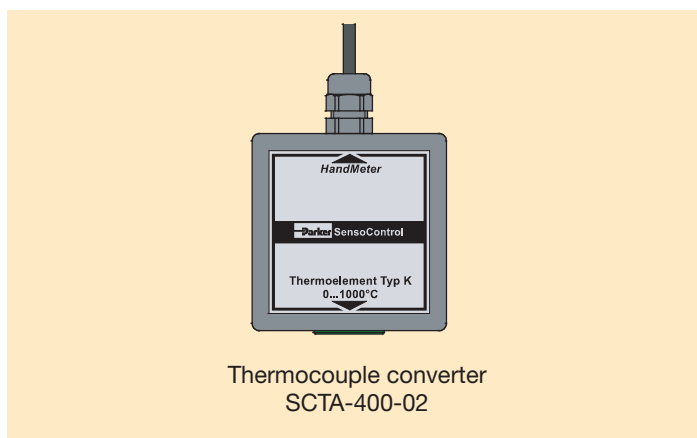
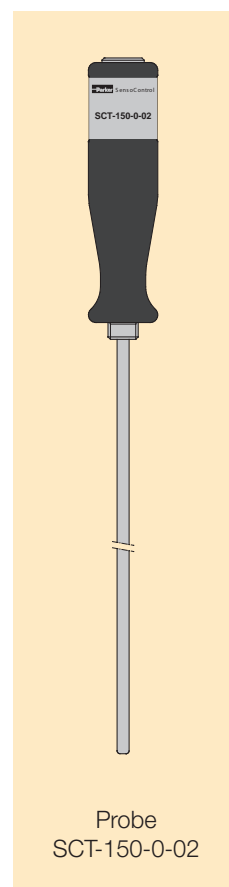
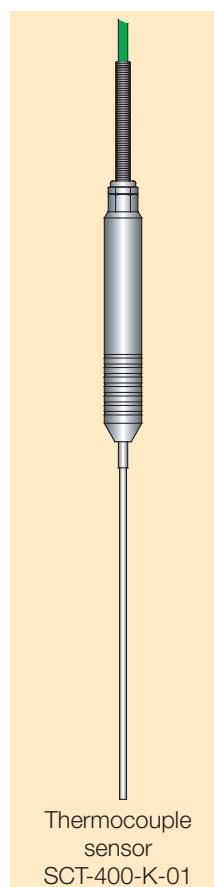
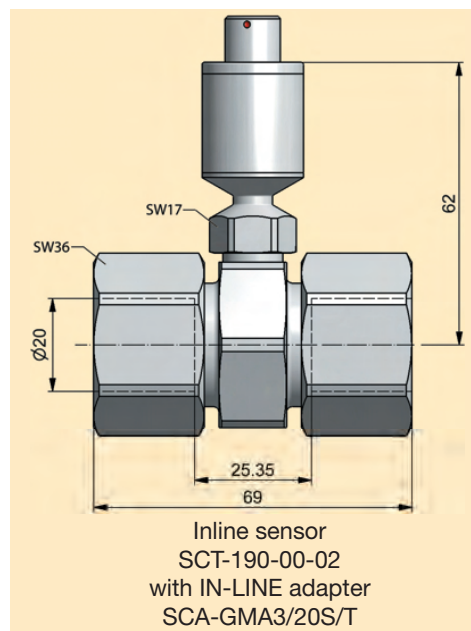
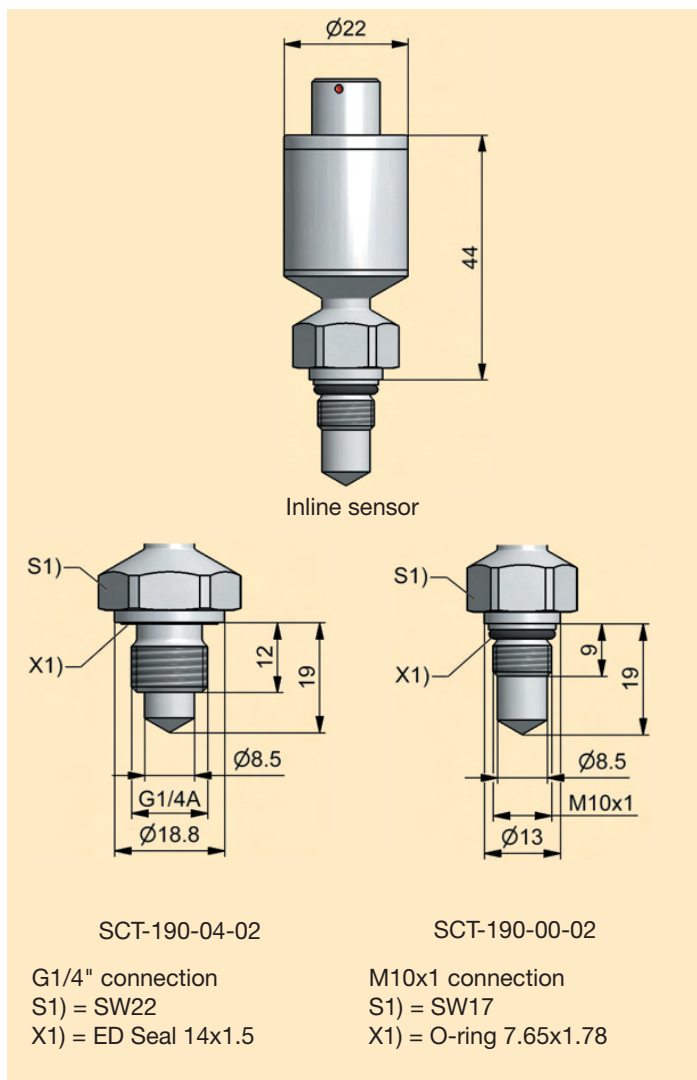
High-temperature-proof thermocouple sensors are used for the measurement of exhaust-gas temperatures of up to 1,000 °C in diesel engines.

The thermocouple converter SCTA-400 -02 is compatible with all thermocouple sensors of K type.



12 Temperature measurement SCT analogue

Technical data



Sensors

12 Temperature measurement SCT analogue

Technical data

Type	SCT-190-04-02	SCT-190-00-02	SCT-150-0-02	SCT-400-K-01	SCTA-400-02
Accuracy					
Measuring range (°C)	-40 ... +150	-40 ... +150	-25...+125	0...+1,000	0...+1,000
Accuracy	± 1.0% FS*	± 1.0% FS*	±1.5 K	±1.5 K	±1.0 % FS*
Response time	T ₅₀ ≤ 4s, T ₉₀ ≤ 14s	T ₅₀ ≤ 4s, T ₉₀ ≤ 12s	T ₉₀ ≤ 9.1s	T ₉₀ ≤ 5s	-
Material					
Housing	Stainless steel	Stainless steel	Probe: stainless steel Grip: Delrin	Stainless steel with 2-m fixed cable	ABS with 30-cm fixed cable
Seal	FKM**	FKM**	-	-	-
Weight (g)	70	55	120	150	-
Parts in contact with media	Stainless steel	Stainless steel	Stainless steel	Stainless steel	-
Ambient conditions					
Ambient temperature (°C)	-40 ... +85 @ m _{bas.T} ≤ 85	-40 ... +85 @ m _{bas.T} ≤ 85	-25...+70	-20...+150	0...+50
Storage temperature (°C)	-40 ... +85	-40 ... +85	-25...+80	-20...+80	-25...+60
Operating pressure (bar)	630	630	-	-	-
Overload pressure (bar)	800	800	-	-	-
Burst pressure (bar)	2,000	2,000	-	-	-

* FS = Full scale (measuring range end value)

** for temperatures of -25...+150 °C, other materials on request

Supply range and accessories

SCT temperature sensors		Order code
Inline sensor (M10x1)		SCT-190-00-02
Inline sensor (G1/4" BSPP male)		SCT-190-04-02
Hand probe		SCT-150-0-02
IN-LINE adapter tube assembly (M10x1)		SCA-GMA3/20S/T
SCT temperature sensor (T_{max} = 1,000 °C)		Order code
Thermocouple converter		SCTA-400-02
Thermocouple sensor		SCT-400-K-01
SCK analogue connection cable		Order code
3 m (male 5 pin - male 5 pin)		SCK-102-03-02
5-m extension cable (male 5 pin - female 5 pin)		SCK-102-05-12
SCT temperature sensors with calibration certificate as per ISO 9001*		Order code
Inline sensor (M10x1)		K-SCT-190-00-02
Inline sensor (G1/4" BSPP male)		K-SCT-190-04-02
Hand probe		K-SCT-150-0-02

* calibrated range -25...+100 °C



13 Temperature measurement SCT CAN

Temperature measurement SCT CAN

- High-pressure-resistant temperature sensors for hydraulic measurements
- For measuring temperatures of up to 150°C
- Flexible operation
- Inline sensor
- Sensor identification LED
- Accuracy $\pm 0.66\%$
- Quick-plug-screw connection SPEEDCON®
- Suitable for long cables



In hydraulics, temperature measurements serve to locate faults and avoid the kind of damage caused by excessive temperatures in critical parts such as pumps and proportional valves.

To obtain the exact temperature, the measurement is done directly in the tube or hose line.

SCT-190 inline sensors can also be used with the SCFT turbine flow meters for measuring temperatures.

13 Temperature measurement SCT CAN

Function specifications



The Parker Service Master *Plus*
SCM-500-xx-xx

Connection cable
SCK-401-02-4F-4M



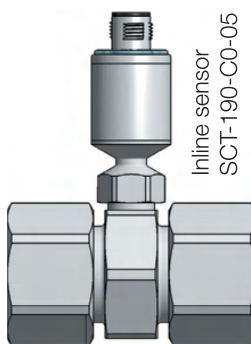
Connection cable
SCK-401-02-4F-4M



Parker Serviceman
Plus SCM-155-2-05



Terminating
resistor
SCK-401-R



Inline sensor
SCT-190-C0-05

IN-LINE adapter
SCA-GMA3/20S/T

Sensors

Inline sensor SCT-190 (-40 °C...+150 °C)

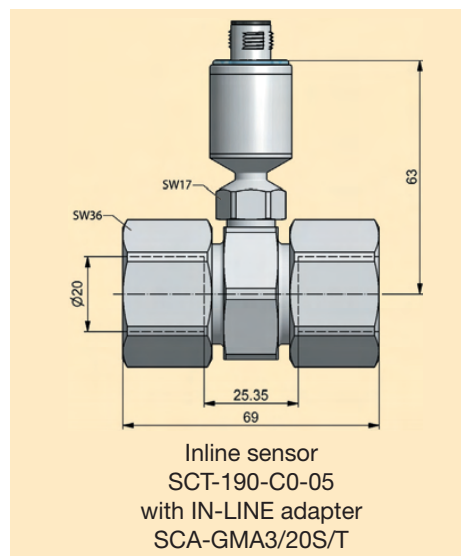
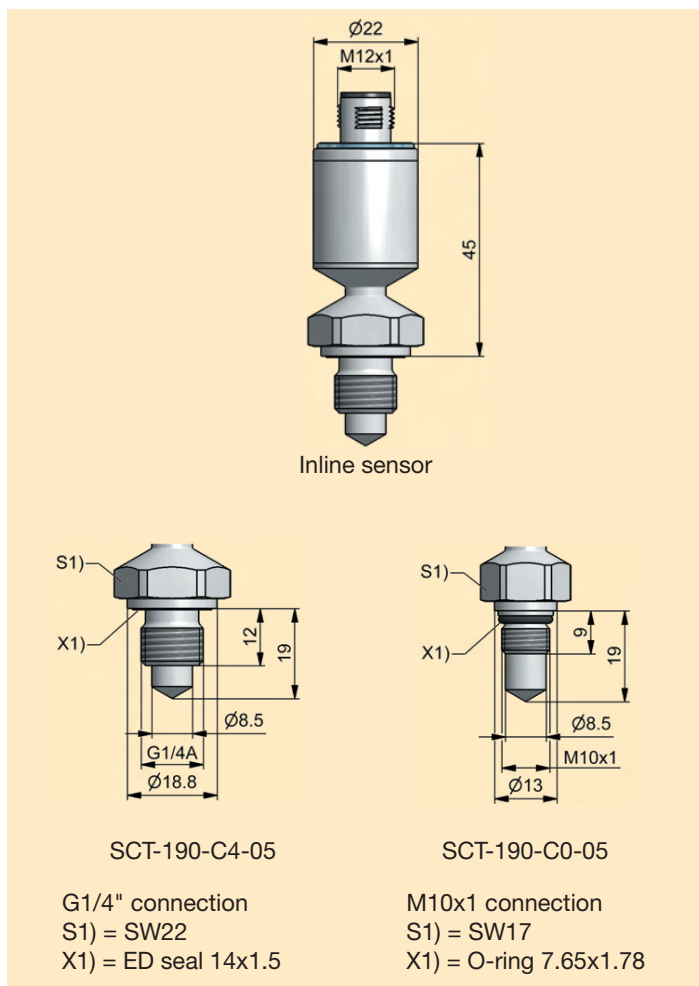
The inline sensor SCT-190-C0-05 can be adapted to the hydraulic system up to a system pressure of 630 bar.

The male stud is compatible with the measuring connections of the GMA3/20 series and the turbine flow meter SCFT-xxx.



13 Temperature measurement SCT CAN

Technical data



Type	SCT-190-C0-05	SCT-190-C4-05
Measuring range (°C)	-40 ... +150	-40 ... +150
Accuracy	$\pm 0.66\%$ FS	$\pm 0.66\%$ FS
Response time	$T_{50} \leq 4s, T_{90} \leq 12s$	$T_{50} \leq 4s, T_{90} \leq 14s$
Ambient temperature (°C)	-40 ... +85 @ meas.T ≤ 85 °C -40 ... +70 @ meas.T > 85 °C	-40 ... +85 @ meas.T ≤ 85 °C -40 ... +70 @ meas.T > 85 °C
Storage temperature (°C)	-40 ... +85	-40 ... +85
Operating pressure (bar)	630	630
Overload pressure (bar)	800	800
Burst pressure (bar)	2,000	2,000
Housing	Stainless steel	Stainless steel
Seal	FKM**	FKM**
Weight (g)	55	70
Parts in contact with media	Stainless steel	Stainless steel

* FS = Full scale (measuring range end value)
** for temperatures of -25...+150 °C, other materials on request

13 Temperature measurement SCT CAN

Supply range and accessories

SCT temperature sensors CAN	Order code
Inline sensor (M10x1)	SCT-190-C0-05
Inline sensor (G1/4" BSPP male)	SCT-190-C4-05
IN-LINE adapter tube assembly (M10x1)	SCA-GMA3/20S/T

SCK connection cables CAN*	Order code
0.5 m (male 5 pin - female 5 pin)	SCK-401-0.5-4F-4M
2 m (male 5 pin - female 5 pin)	SCK-401-02-4F-4M
5 m (male 5 pin - female 5 pin)	SCK-401-05-4F-4M
10 m (male 5 pin - female 5 pin)	SCK-401-10-4F-4M
20 m (male 5 pin - female 5 pin)	SCK-401-20-4F-4M
CAN Y-junction	SCK-401-Y
CAN Y-junction incl. 0.3-m cable	SCK-401-0.3-Y
CAN T-junction	SCK-401-T
Terminating resistor** CAN (female 5 pin - female 5 pin)	SCK-401-R

* Other lengths available on request

** Each CAN network requires a terminating resistor.

SCT temperature sensors CAN with calibration certificate as per ISO 9001*	Order code
Inline sensor (M10x1)	K-SCT-190-C0-05
Inline sensor (G1/4" BSPP male)	K-SCT-190-C4-05

* calibrated range -25...+100 °C

14 Tachometer SCRPM analogue

Tachometer SCRPM analogue

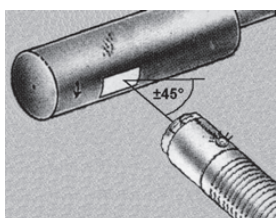
- Also for contactless measurement of rotational speed
- Measures up to 10,000 RPM
- With 3-meter fixed cable



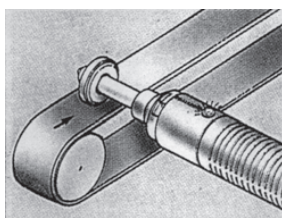
Rotational-speed-dependent data, such as flowrate from variable pumps, are determined ideally in combination with the pressure and volume flow measurement of a hydraulic drive.

Contactless speed measurement (opto-electronic principle) can be done quickly and easily.

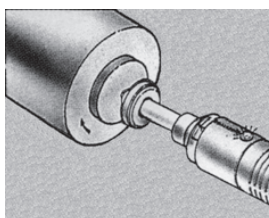
The rotational speed is measured e.g. on a drive shaft and displayed on the handheld device. Installation or adjustment are not necessary.



Rotating shaft - non-contact measurement of rotational speed.



Contact measurement of rotational speed with contact adapter.



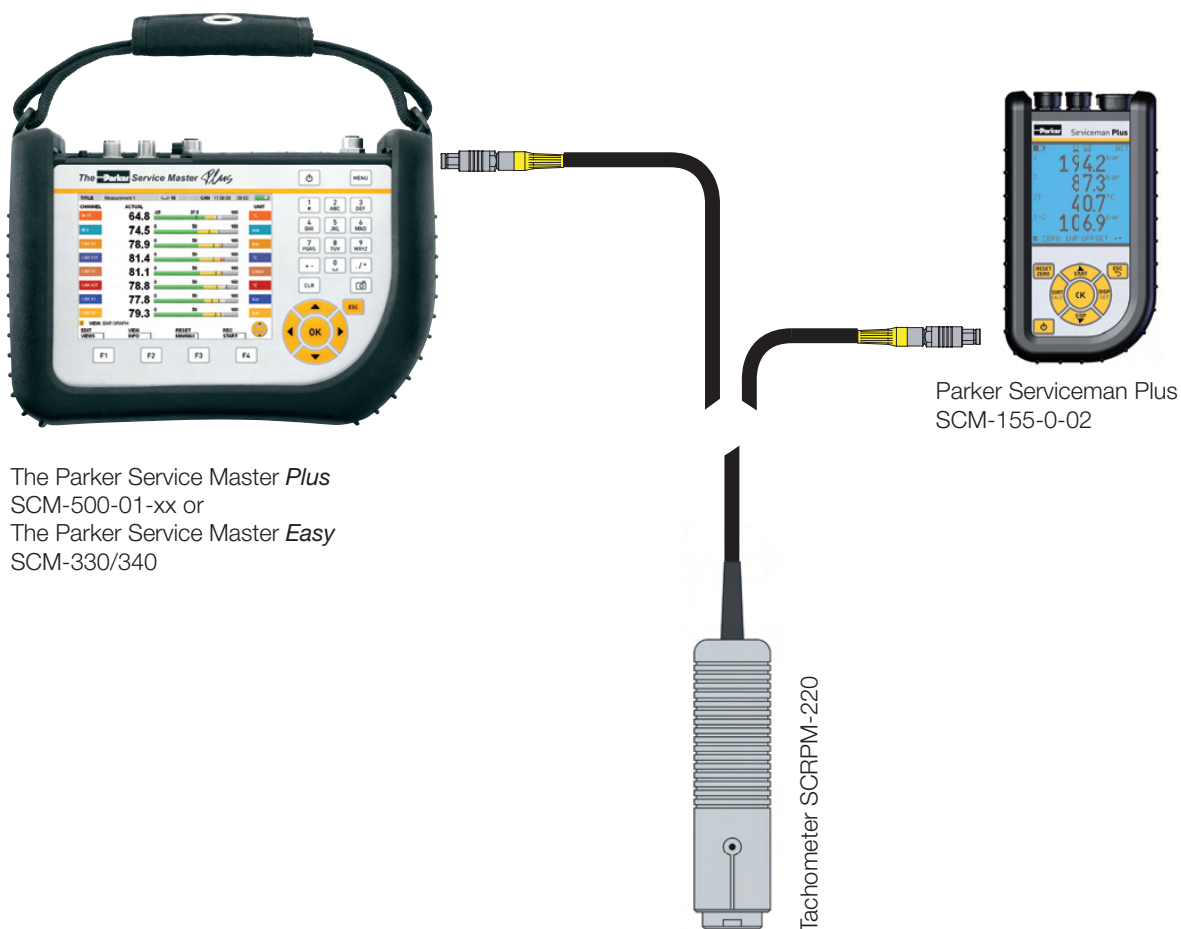
Front-face measurement of rotational speed with contact adapter.

For accurate recording of the opto-electronic signal, please use the reflecting strips supplied.

On a shaft or drive unit, the rotational speed is measured directly with the contact adapter.

14 Tachometer SCRPM analogue

Function specifications



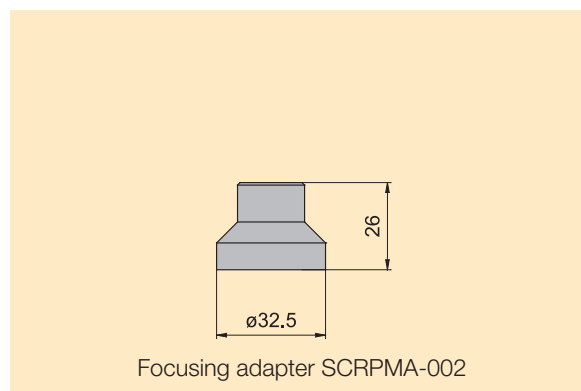
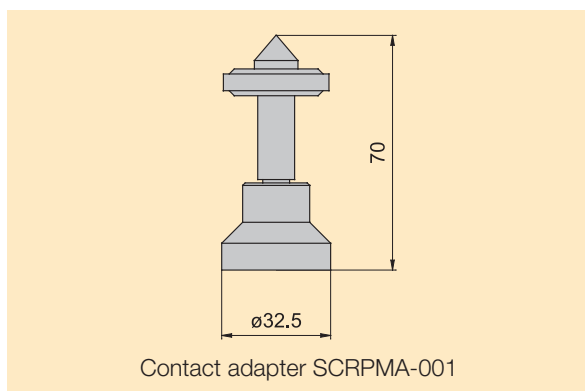
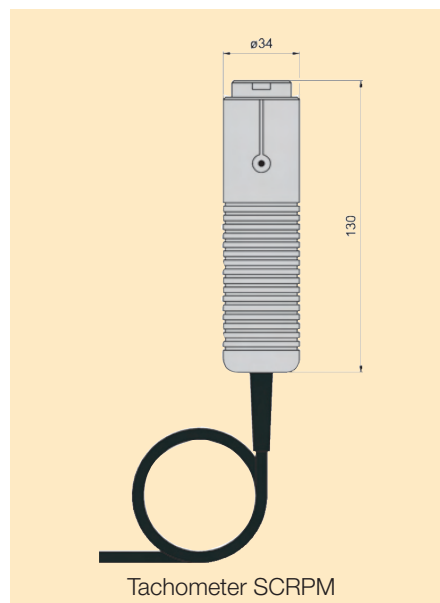
Sensors



14 Tachometer SCRPM analogue

Technical data

Input	
Measuring distance	25...500 mm
Measuring angle	± 45°
Type of measuring	optical, red LED
Output	
Measuring range	20...10.000 RPM
Accuracy	< 0.5 % FS*
Resolution	± 5 RPM
Electrical connection to hand-held measuring device	
Fixed cable 3 m**	5 pin push-pull
General	
Material	ABS
Dimensions	Ø 34 mm/L = 130 mm
Weight	230 g
Ambient temperature	0...70 °C
* FS = Full scale (measuring range end value)	
** Cable extension is not permitted	



Supply range and accessories

SCRPM tachometer	Order code
20...10,000 RPM	SCRPM-220
SCRPM accessories	Order code
Contact adapter	SCRPMMA-001
Focusing adapter	SCRPMMA-002
Reflector strips (spares)	SCRPMMA-010
SCRPM tachometer with calibration certificate as per ISO 9001	Order code
20...10,000 RPM	K-SCRPM-220



Volume flow measurement

Volume flow measurement

Turbine flow meter, type SCFT

- Lower flow resistance
- Built-in measurement connections for pressure and temperature
- Very simple installation into a hydraulic system
- 6 different measuring ranges up to 750 l/min.

Hydraulic tester SCLV

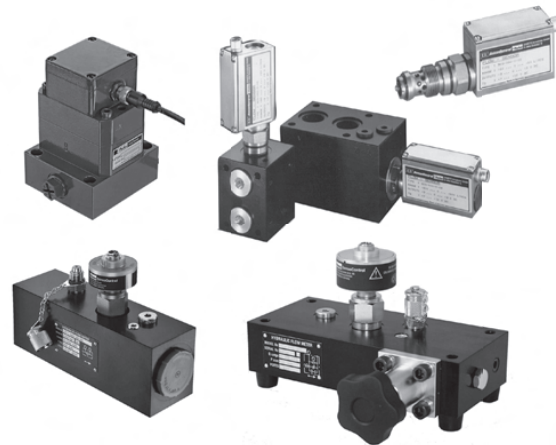
- Recording of a p/Q characteristic curve with a pressure load valve to determine hydraulic performance
- Resistant to high pressure of up to 480 bar
- 2 measuring ranges of up to 750 l/min
- Integrated overload protection
- Reverse-mode operation

Flow meter, type SCQ

- Flow measurement with direction indication
- Very fast response time < 2 ms
- Wide range of viscosities
- Screw-in cartridge in connector block SCAQ

Volume meter, type SCVF

- 4 measuring ranges of up to 300 l/min
- Measuring accuracy $\pm 0.5\%$ FS
- Pressure resistant up to 400 bar
- High viscosity range
- Low noise level



In addition to pressure measurement, the precise determination of volume flow in hydraulic equipment provides important information on the condition of the hydraulics. The efficiency of hydraulic drives such as hydrostatic units or variable pumps depends on the volume of flow. Hydraulic performance is determined by pressure and volume flow. The degree of wear in a hydraulic drive can be ascertained by comparing nominal and actual values. The resulting measurements can be used, for example, in preventive maintenance for systematic servicing and cost reductions. In mobile hydraulics, the efficiency of the machine is continually checked and documented. The diagnosis of pressure and flow thereby provides a total analysis.

15 Turbine flow meter SCFT analogue

Turbine flow meter SCFT analogue

- 6 measuring ranges of up to 750 l/min
- Easy installation
- High-pressure resistant up to 480 bar
- Low flow resistance
- Built-in pressure and temperature measurement connections
- Suitable for reverse-mode operation



Flow measurement with low flow resistance. Combined p, T and Q measurement possible with additional sensors.

Function

A turbine wheel is driven by the oil flow. The frequencies thus produced are processed by digital electronics. The influence of turbulent flow effects is compensated for.

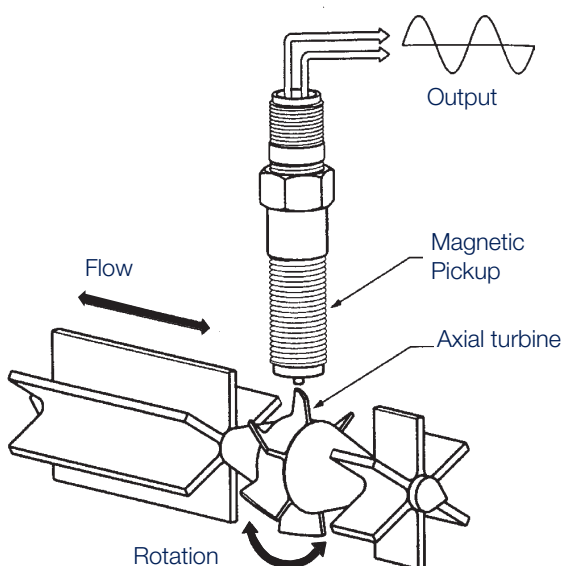
Because of the low flow resistance Q_R the hydraulic circuit operates with very low losses.

For pressure measurement, the turbine is equipped with an EMA-3 quick-connector.

Oil temperatures can be measured directly in the oil flow in the turbine flow meter. Consequently all the important measurement parameters are available at one measuring location.

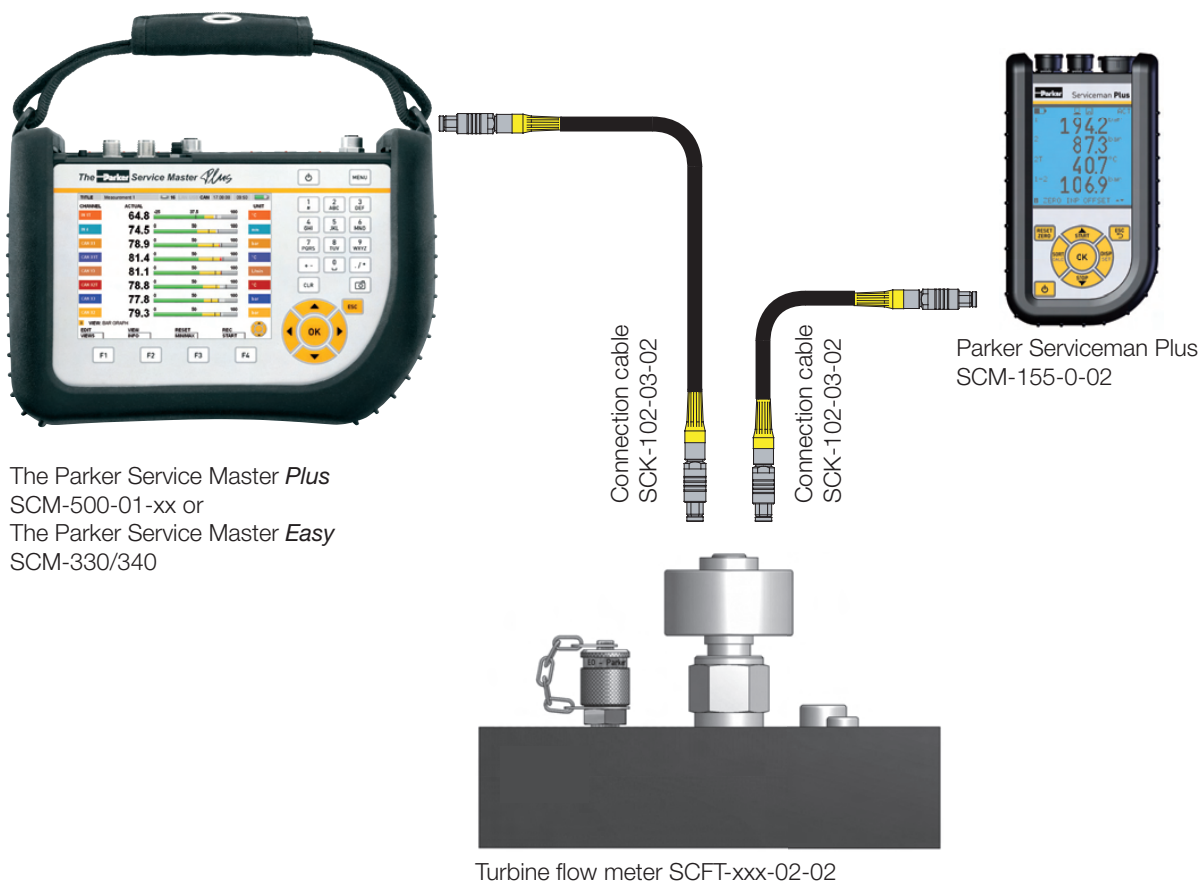
Applications

- Mobile diagnostic
- p-Q measurement
- Hydraulic tests with load valve



15 Turbine flow meter SCFT analogue

Function specifications



The Parker Service Master *Plus*
SCM-500-01-xx or
The Parker Service Master *Easy*
SCM-330/340

Parker Serviceman Plus
SCM-155-0-02

Connection cable
SCK-102-03-02

Connection cable
SCK-102-03-02

Turbine flow meter SCFT-xxx-02-02

Sensors



15 Turbine flow meter SCFT analogue

Technical data

Type	SCFT-015	SCFT-060	SCFT-150	SCFT-300	SCFT-600	SCFT-750
Flow range Q_N (l/min)	1...015	3...060	5...150	8...300	15...600	20...750
Accuracy (\pm %) FS/IR @ 21cSt.	1.0 FS	1.0 IR*	1.0 IR*	1.0 IR*	1.0 IR*	1.0 IR*
Operating pressure P_N (bar)	350	350	350	350	290	400
Ports (A - B)	1/2" BSPP	3/4" BSPP	3/4" BSPP	1" BSPP	1-1/4" BSPP	1-7/8" UNF
Pressure drop ΔP_{max} (bar) @ FS*, 21cSt	1.5	1.5	1.5	4	5	5
Weight (g)	650	750	750	1,200	1,800	2,100

FS = Full Scale (measuring range end value)

IR = Indicated Reading (measured value displayed)

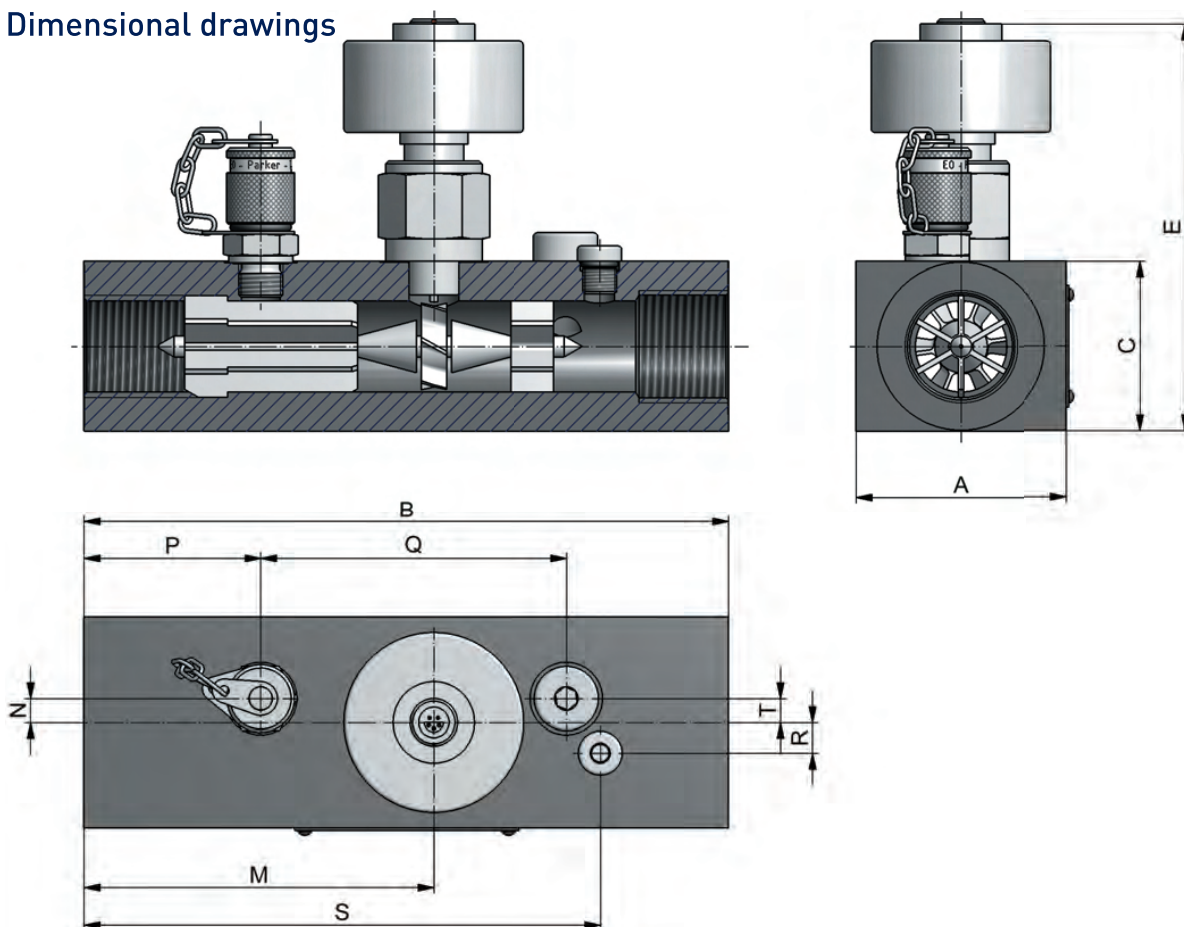
* = for measurements ≥ 15 % FS, for measurements < 15 % FS accuracy 0.15 % FS

Response time	50 ms
Q_{max}	$Q_N \times 1.1$ l/min
Overload pressure P_{max}	$P_N \times 1.2$ bar
Ports:	
Temperature port (SCT-190)	M10x1
Pressure port (EMA3 port)	M16x2
Pressure port (VSTI)	1/4" BSPP
Housing	Aluminium
Seal	FKM
Parts in contact with media	Aluminium, steel, FKM
Type of protection	IP54 EN 60529

Ambient temperature (°C)	-10...+50
Storage temperature (°C)	-20...+80
Media temperature (°C)	-20...+90
Filtration	25 μ m (10 μ m for SCFT-015)
Viscosity range (cSt.) (calibrated at 21 cSt., other viscosities on request)	10..100

15 Turbine flow meter SCFT analogue

Dimensional drawings



Sensors

Type	SCFT-015	SCFT-060	SCFT-150	SCFT-300	SCFT-600	SCFT-750
A	37	62	62	62	62	100
B	136	190	190	190	212	212
C	37	50	50	50	75	75
E	108	121	121	125	140	143
M	70	103	103	103	127	126
N	N/A	5	5	7	9	12
P	25	52	52	52	62	60
Q	N/A	90	90	90	106	104
R	N/A	5	5	9	11	10
S	115	157	157	152	168	181
T	N/A	9	9	10	9	12

All dimensions in mm



15 Turbine flow meter SCFT analogue

Supply range and accessories

SCFT turbine flow meter	Order code
1.0...15/3...60/5...150/8...300/15...600/20...750 l/min	SCFT-xxx-02-02
SCK analogue connection cable	Order code
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5 m (male 5 pin - male 5 pin)	SCK-102-05-02
5-m extension cable (male 5 pin - female 5 pin)	SCK-102-05-12
SCFT turbine flow meter with calibration certificate as per ISO 9001	Order code
1.0...15/3...60/5...150/8...300/15...600/20...750 l/min	K-SCFT-xxx-02-02

16 Turbine flow meter SCFTT CAN

Turbine flow meter SCFTT CAN

- Turbine flow meter with integrated temperature sensor in CAN bus technology
- 6 measuring ranges of up to 750 l/min
- Simple installation
- High-pressure-resistant up to 480 bar
- Low flow resistance
- Built-in pressure and temperature measurement connections
- Suitable for reverse-mode operation
- Simple wiring with SPEEDCON®
- Suitable for long cables
- Sensor identification LED



Flow measurement with low flow resistance. Combined p, T and Q measurement possible with additional sensors.

Function

A turbine wheel is driven by the oil flow. The frequencies thus produced are processed by digital electronics. The influence of turbulent flow effects is compensated for.

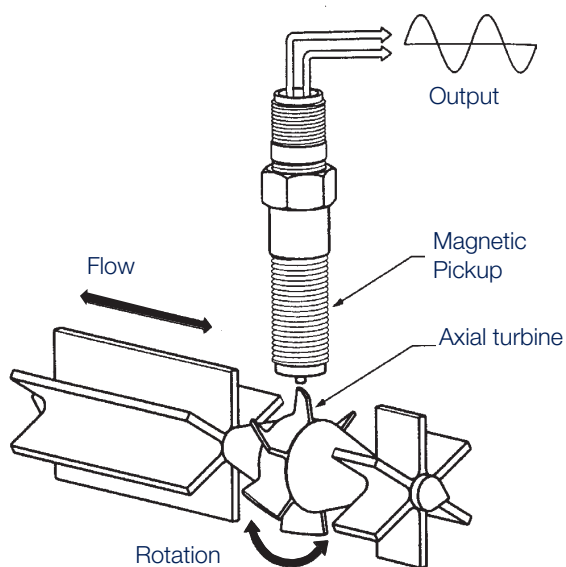
Because of the low flow resistance Q_R the hydraulic circuit operates with very low losses.

For pressure measurement the turbine is equipped with an EMA-3 quick coupling.

Oil temperatures are measured directly in the oil flow in the turbine flow meter. Consequently all the important measurement parameters are available at one measuring location.

Applications

- Mobile diagnostic
- p-Q measurement
- Hydraulic tests with load valve



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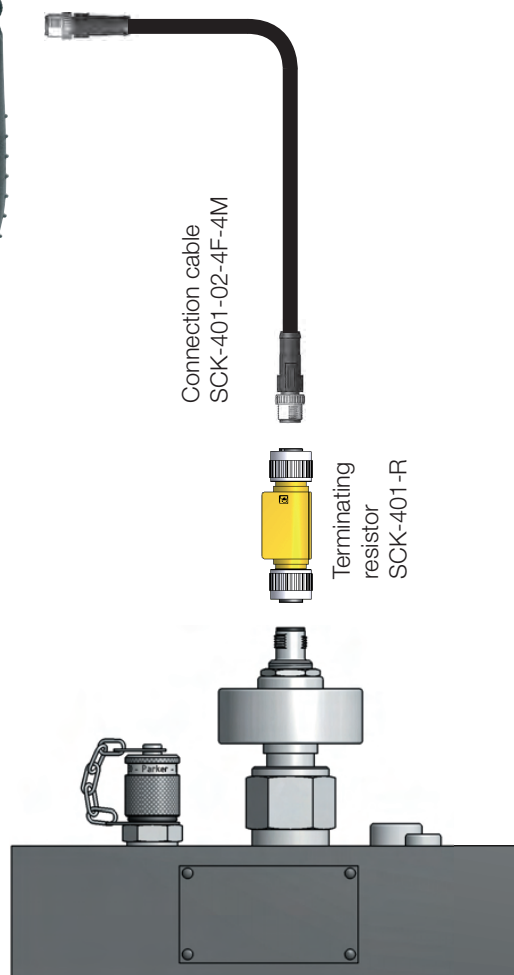


16 Turbine flow meter SCFTT CAN

Function specifications



The Parker Service Master *Plus*
SCM-500-xx-xx or
Parker Serviceman Plus
SCM-155-02-05



Turbine flow meter SCFTT-xxx-C2-05

Sensors

16 Turbine flow meter SCFTT CAN

Technical data

Type	SCFTT-015	SCFTT-060	SCFTT-150	SCFTT-300	SCFTT-600	SCFTT-750
Flow range Q_N (l/min)	1...015	3...060	5...150	8...300	15...600	20...750
Accuracy (\pm %) FS/IR @ 21cSt.	1.0 FS	1.0 IR*	1.0 IR*	1.0 IR*	1.0 IR*	1.0 IR*
Operating pressure P_N (bar)	350	350	350	350	290	400
Ports (A-B)	1/2" BSPP	3/4" BSPP	3/4" BSPP	1" BSPP	1-1/4" BSPP	1-7/8" UNF
Pressure drop ΔP_{max} (bar) @ (FS)	1.5	1.5	1.5	4	5	5
Weight (g)	650	750	750	1,200	1,800	2,100

FS = Full Scale
IR = Indicated Reading
* = for measurements ≥ 15 % FS, for measurements < 15 % FS accuracy 0.15 % FS

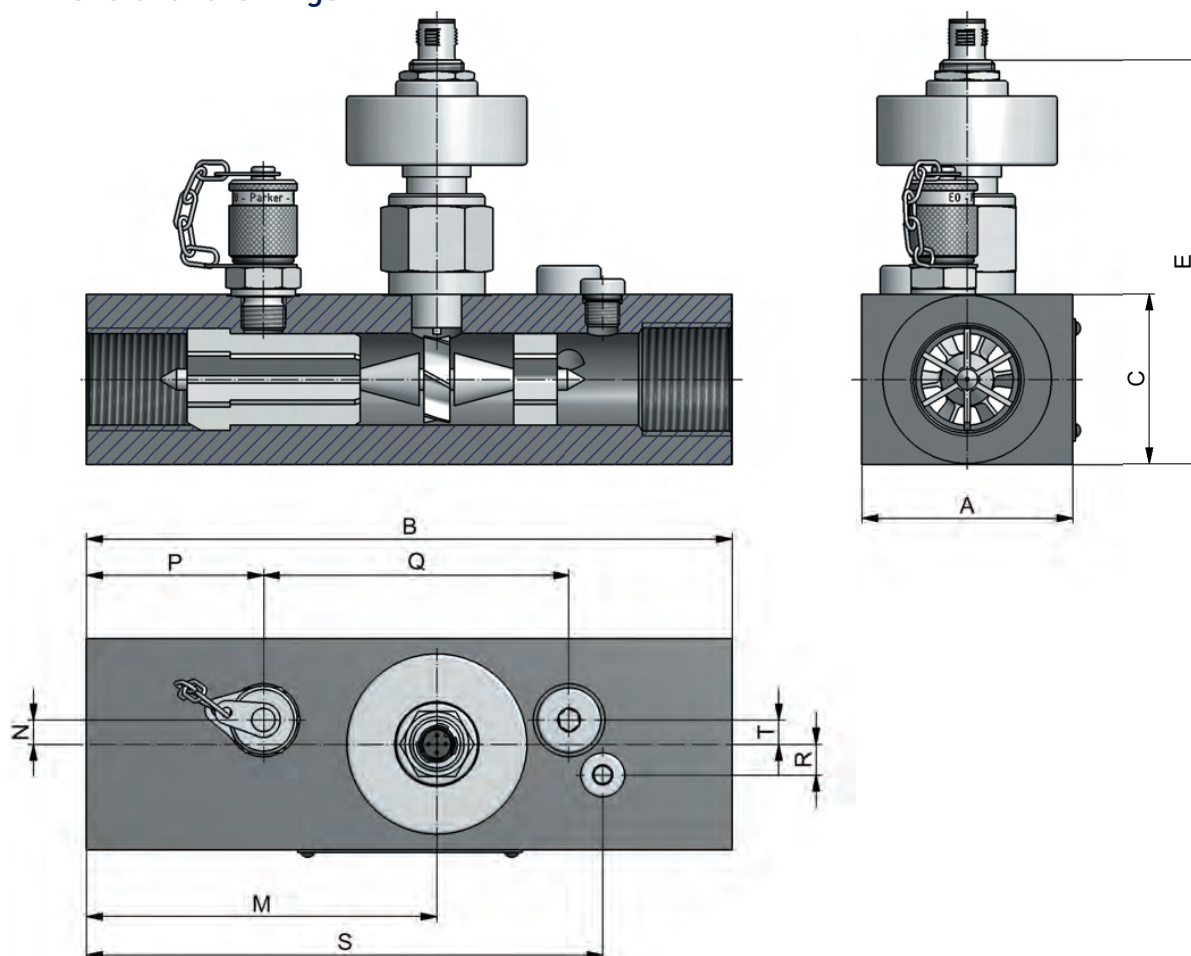
Response time	50 ms	Ambient temperature (°C)	-10...+50
Accuracy of temperature measurement	± 2 K	Storage temperature (°C)	-20...+80
Q_{max}	$Q_N \times 1.1$ l/min	Media temperature (°C)	-20...+90
Overload pressure P_{max}	$P_N \times 1.2$ bar	Filtration	25 μ m (10 μ m for SCFT-015)
Ports:		Viscosity range (cSt.) (calibrated at 21 cSt., other viscosities on request)	10..100
Temperature port (SCT-190)	M10x1		
Pressure port (EMA3 port)	M16x2		
Pressure port (VSTI)	1/4" BSPP		
Housing	Aluminium		
Seal	FKM		
Parts in contact with media	Aluminium, steel, FKM		
Type of protection	IP66 EN 60529		

Sensors



16 Turbine flow meter SCFTT CAN

Dimensional drawings



Type	SCFTT-015	SCFTT-060	SCFTT-150	SCFTT-300	SCFTT-600	SCFTT-750
A	37	62	62	62	62	100
B	136	190	190	190	212	212
C	37	50	50	50	75	75
E	105	118	118	119	137	141
M	70	103	103	103	127	126
N	N/A	5	5	7	9	12
P	25	52	52	52	62	60
Q	N/A	90	90	90	106	104
R	N/A	5	5	9	11	10
S	115	157	157	152	168	181
T	N/A	9	9	10	9	12

All dimensions in mm



16 Turbine flow meter SCFTT CAN

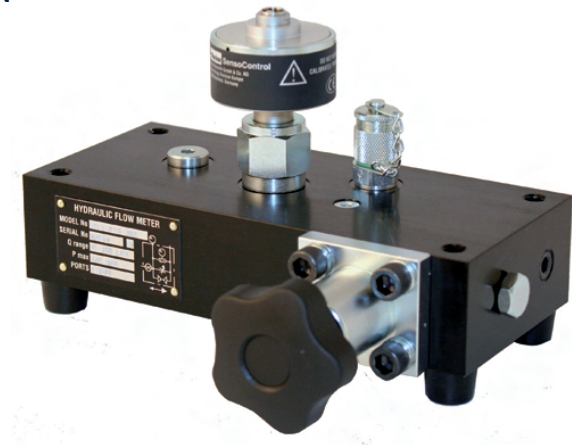
Supply range and accessories

SCFTT-CAN turbine flow meter	Order code
1.0...15/3...60/5...150/8...300/15...600/20...750 l/min	SCFTT-xxx-C2-05
SCK connection cables CAN*	Order code
0.5 m (male 5 pin - female 5 pin)	SCK-401-0.5-4F-4M
2 m (male 5 pin - female 5 pin)	SCK-401-02-4F-4M
5 m (male 5 pin - female 5 pin)	SCK-401-05-4F-4M
10 m (male 5 pin - female 5 pin)	SCK-401-10-4F-4M
20 m (male 5 pin - female 5 pin)	SCK-401-20-4F-4M
CAN Y-junction	SCK-401-Y
CAN Y-junction incl. 0.3-m cable	SCK-401-0.3-Y
CAN T-junction	SCK-401-T
Terminating resistor** CAN (female 5 pin - female 5 pin)	SCK-401-R
* Other lengths available on request	
** Each CAN network requires a terminating resistor.	
SCFT CAN turbine flow meter with calibration certificate as per ISO 9001	Order code
1.0...15/3...60/5...150/8...300/15...600/20...750 l/min	K-SCFTT-xxx-C2-05

17 Hydraulic testers SCLV analogue and CAN

Hydraulic testers SCLV analogue and CAN

- Pressure, temperature and flow measuring device
- 2 measuring ranges of up to 750 l/min
- High-pressure-resistant up to 480 bar
- Integrated overload protection
- Reverse-mode operation (direction of flow A - B)
- Also with CAN bus connection
- CAN version with integrated temperature sensor



Measurement of pressure, temperature and flow

Special features:

- Easy to use in both flow directions; integrated oil bypass protects the system, testing device and operator from surge pressures
- User-selectable flow direction enables smooth connection and simple measuring
- Can be put into use quickly with pumps, valves, motors, cylinders and hydrostatic drives

The hydraulic testers are designed for testing the functionality of motors, pumps, valves and hydrostatic drives. These easy-to-use hydraulic testers can help locate faults in a hydraulic system.

These hydraulic testers can be used for precisely measuring pressure, temperature and flow. The testers are also helpful when performing hydraulic system maintenance, locating error sources on directional control valves and making valve adjustments.

The pressure-load valve with its integrated bypass-blow-out discs makes it possible to build up pressure progressively in order to check the flow in an entire working area.

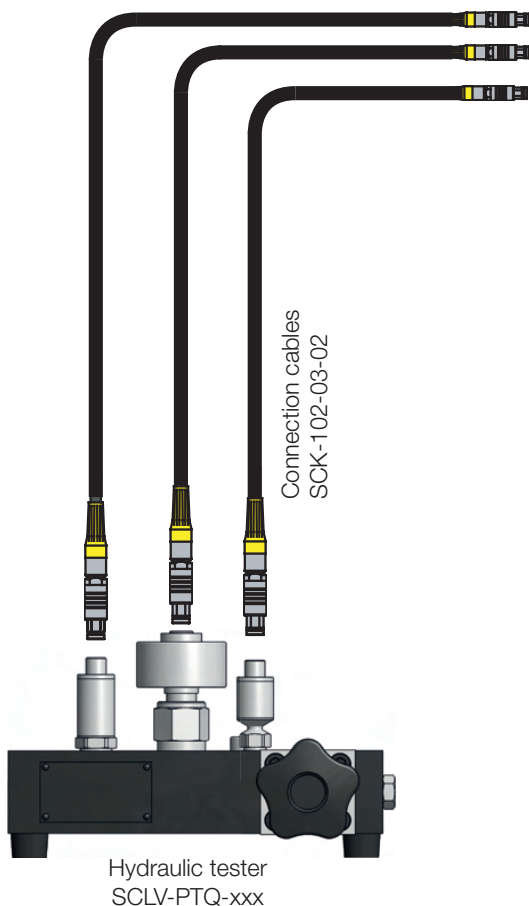
Integrated safety shut-off (blow-out discs)

The load valve is fitted with two safety blow-out discs. The device is protected by this safety mechanism. These discs break and the load valve becomes inactive whenever the maximum permitted operating pressure (P_{max}) is exceeded. The complete flow then runs off to the tank.

Read the operating manual carefully before replacing the blow-out discs.

17 Hydraulic testers SCLV analogue and CAN

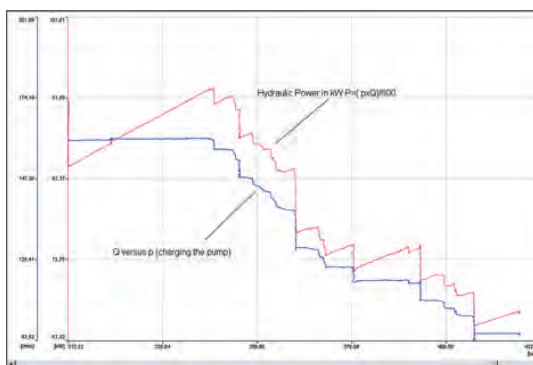
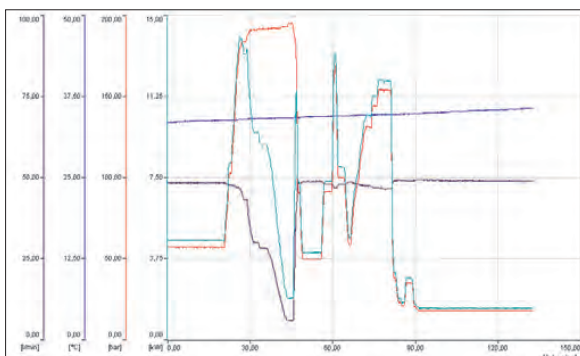
Function specifications



Pressure, volume flow and temperature measurement with the Parker Serviceman Plus, The Parker Service Master *Easy* SCM-330/340 or Service Master *Plus* SCM-500-01-xx and the HydraulicTester SCLV-PTQ

Sensors

The p-Q diagram (right) shows the power determined. Especially in hydraulic pump (load sensing) systems, this analysis is necessary for rotational-speed-dependent loads. The evaluation with the PC software **SensoWin®** is quick and easy.



The hydraulic power of a system can be analysed by a combined measurement of pressure and volume flow (left).

The graph shows an application with a hydraulic tester SCLV-PTQ. Pressure is generated in the system with the installed pressure load valve.

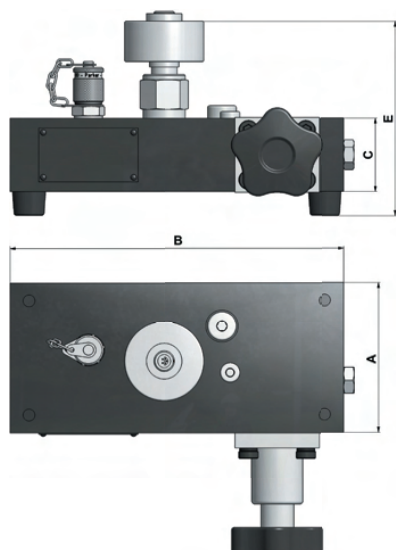
In the evaluation, power is calculated from the flow volume and pressure of the pump.



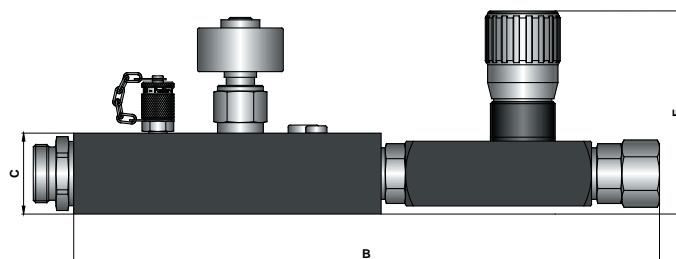
17 Hydraulic testers SCLV analogue and CAN

Technical data

Hydraulic tester
SCLV-PTQ-xxx



Turbine flow meter incl. throttle check valve
SCFT-150-DRV



Type	SCFT-150-DRV	SCLV-PTQ-300	SCLV-PTQ-750
A	62	98	117
B	370	222	235
C	50	50	75
E	130	135	150

Type	SCFT-150-DRV	SCLV-PTQ-300	SCLV-PTQ-750
Flow range Q_N (l/min)	6...150	10...300	20...750
Accuracy (\pm %) IR** @ 21cSt.	1.0	1.0 (> 20 l/min)	1.0 (> 25 l/min)
Operating pressure P_N (bar)	350	350	400
Safety shut-off (Blow-out disc)	–	420 bar	480 bar
Ports (A - B)	3/4" BSPP	1" BSPP	1-7/8" UNF
Pressure drop ΔP_{max} (bar) @ (FS*) 21cSt.	15	4	5
Weight (kg)	4.2	5.5	8.9

* FS = Full Scale (measuring range end value)
** IR = Indicated Reading (measured value displayed)

Response time	50 ms
Accuracy of temperature measurement only with CAN	± 2 K
Q_{max}	$Q_N \times 1.1$ l/min
Overload pressure P_{max}	$P_N \times 1.2$ bar
Ports:	
Temperature port (SCT-190)	M10x1
Pressure port (EMA3 port)	M16x2
Pressure port (VSTI)	1/4" BSPP
Housing	Aluminium
Seal	FKM
Parts in contact with media	Aluminium, steel, FKM

Ambient temperature (°C)	-10...+50
Storage temperature (°C)	-20...+80
Media temperature (°C)	-20...+90
Filtration (μ m)	25 μ m
Viscosity range (cSt.) (calibrated at 21 cSt., other viscosities on request)	10..100

17 Hydraulic testers SCLV analogue and CAN

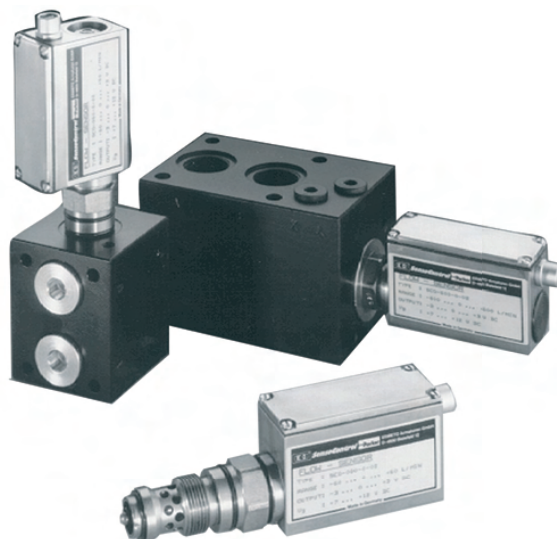
Supply range and accessories

SCLV-PTQ hydraulic tester with pressure load valve	Order code
10...300 l/min, $P_{\max} = 420$ bar	SCLV-PTQ-300
10...300 l/min, $P_{\max} = 420$ bar, with CAN bus connection	SCLVT-PTQ-300-C2-05
20...750 l/min, $P_{\max} = 480$ bar	SCLV-PTQ-750
20...750 l/min, $P_{\max} = 480$ bar, with CAN bus connection	SCLVT-PTQ-750-C2-05
SCLV-PTQ blow-out discs	Order code
for 10...300 l/min, $P_{\max} = 420$ bar (4 blow-out discs)	SCLV-DISC-300
for 20...750 l/min, $P_{\max} = 480$ bar (4 blow-out discs)	SCLV-DISC-800
SCFT turbine flow meter incl. throttle check valve	Order code
6...150 l/min, $P_{\max} = 400$ bar	SCFT-150-DRV
6...150 l/min, $P_{\max} = 400$ bar, with CAN bus connection	SCFTT-150-DRV-C2-05
SCK analogue connection cables	Order code
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5 m (male 5 pin - male 5 pin)	SCK-102-05-02
5-m extension cable (male 5 pin - female 5 pin)	SCK-102-05-12
SCK connection cables CAN*	Order code
0.5 m (male 5 pin - female 5 pin)	SCK-401-0.5-4F-4M
2 m (male 5 pin - female 5 pin)	SCK-401-02-4F-4M
5 m (male 5 pin - female 5 pin)	SCK-401-05-4F-4M
10 m (male 5 pin - female 5 pin)	SCK-401-10-4F-4M
20 m (male 5 pin - female 5 pin)	SCK-401-20-4F-4M
CAN Y-junction	SCK-401-Y
CAN Y-junction incl. 0.3-m cable	SCK-401-0.3-Y
CAN T-junction	SCK-401-T
Terminating resistor** CAN (female 5 pin - female 5 pin)	SCK-401-R
* Other lengths available on request	
** Each CAN network requires a terminating resistor.	

18 Flow meter SCQ analogue

Flow meter SCQ analogue

- Spring/piston system
- Flow measurement with direction indication
- Response time ≤ 2 ms
- Compact design
- Pressure resistant up to 420 bar
- Wide range of viscosities
- With connector block
p, T and Q measurement possible



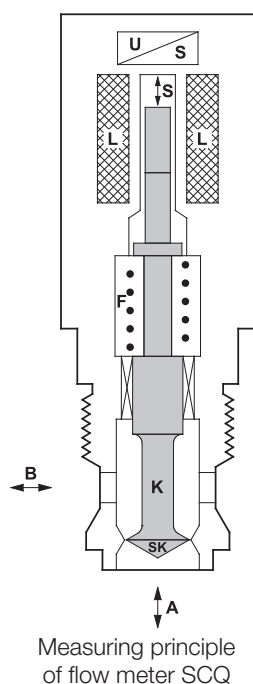
Flow measurement with direction indication for mobile and stationary measurement

Function

When there is a flow from A-B or B-A, the piston (K) is moved. When at rest, the spring (F) and piston (K) are in equilibrium. The path change S is proportional to the flow volume and is converted into a measured value by the integrated electronics. From the change in direction of the piston (B to A), flow directions can be indicated (e.g. -45.8 l/min.). The response time of the piston movement is less than 2 ms.

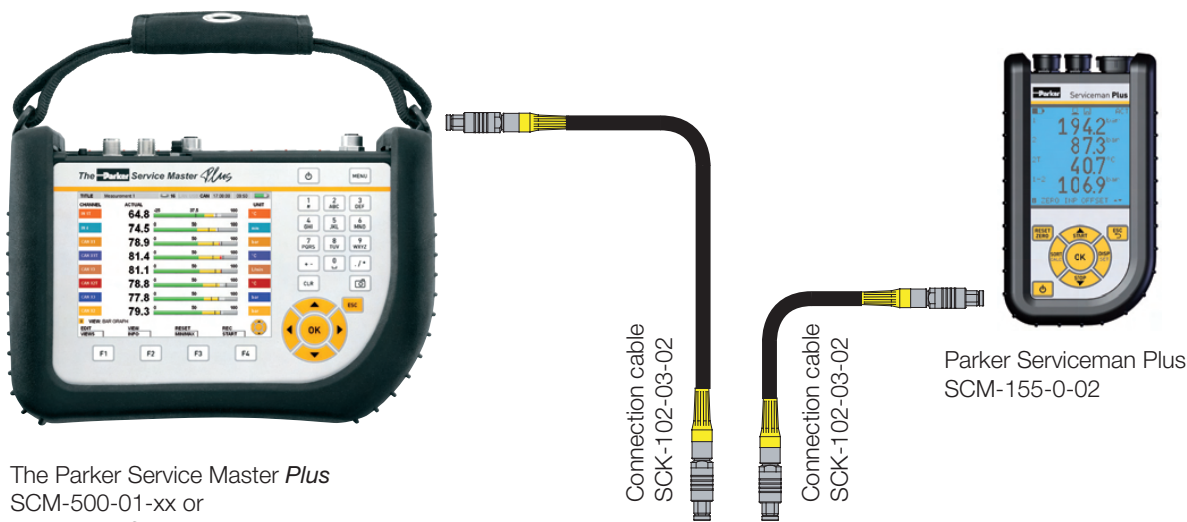
Application

In the field of high pressure hydraulics, the rapid capture of the flow volume is of great significance. Due to the fast response time of the flow meter, the dynamic behaviour of hydraulic systems is measured. The indication of direction is helpful when searching for faults in hydraulic systems. Rapid load changes, which can cause damage for example in valves and pumps, can be determined. Installation with a connection block permits the combined measurement of p, T and Q. With the IN-LINE adapter for tube or hose connection, the flow meter can quickly be installed in the hydraulic system. Robust design enables use in extreme conditions such as high load changes or rates of pressure increase.



18 Flow meter SCQ analogue

Function specifications

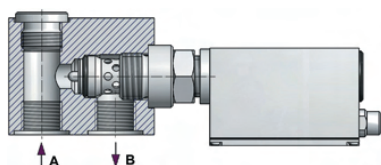


The Parker Service Master *Plus*
SCM-500-01-xx or
The Parker Service Master *Easy*
SCM-330/340

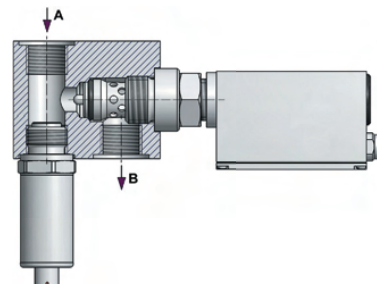
Parker Serviceman Plus
SCM-155-0-02



Flow meter
SCQ-xxx-0-02



Flow meter SCQ
in connection block SCAQ



Flow meter SCQ with
pressure/temperature sensor SCPT
in connection block SCAQ

Sensors



18 Flow meter SCQ analogue

Technical data

Type	SCQ-060	SCQ-150
Flow range Q_N	-60...+60 l/min	-150...+150 l/min
Q_{max}	-66...+66 l/min	-165...+165 l/min
Media connection	M24 (NG10)	M42 (NG16)
Weight (g)	670	1,050

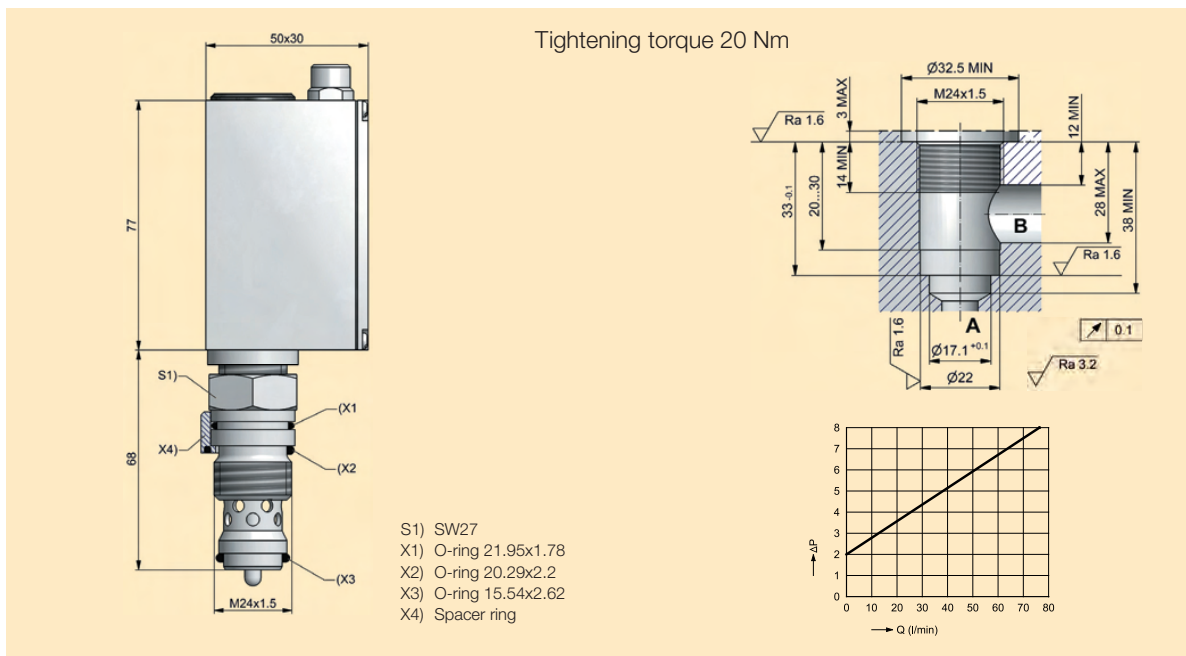
Accuracy	
Deviation from characteristic curve	± 2 % FS @ 46cSt.
Response time	2 ms
Thermal drift	± 0.05 % FS*/°C
Repeat accuracy	± 0.5 % FS*
Resistance to pressure	
Pressure range	3...420 bar
Operating pressure P_N	315 bar
Overload pressure P_{max}	420 bar
Pressure drop ΔP (bar) @ (FS*)	see diagram
Material	
Housing	Steel
Seal	NBR
Parts in contact with media	Steel, NBR
Type of protection	IP54 EN 60529
* FS = Full Scale (measuring range end value)	

Ambient conditions	
Ambient temperature (°C)	+10...+60
Storage temperature (°C)	-20...80
Media temperature (°C)	+80
Filtration	25 μ m
Viscosity range	15...100 cSt.
Electrical connection to handheld measuring device	
Plug connection	5 pin, push-pull
Electromagnetic compatibility	
Interference emissions	EN 61000-6-3
Interference resistance	EN 61000-6-2

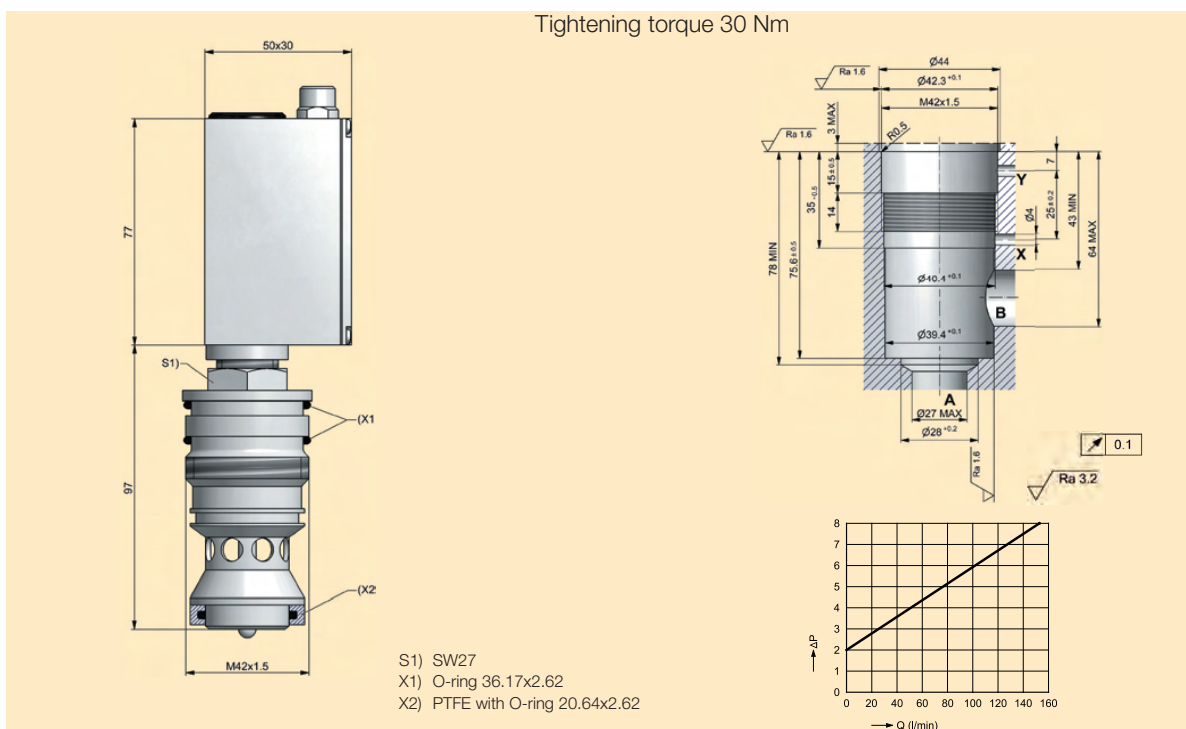
18 Flow meter SCQ analogue

Dimensional drawings

Port dimensions and pressure drop graph SCQ-060



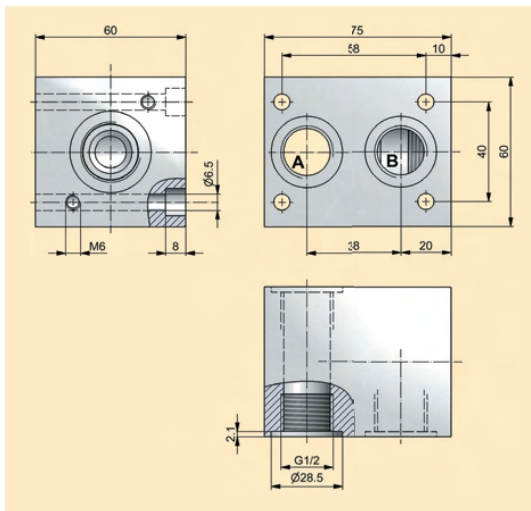
Port dimensions and pressure drop graph SCQ-150



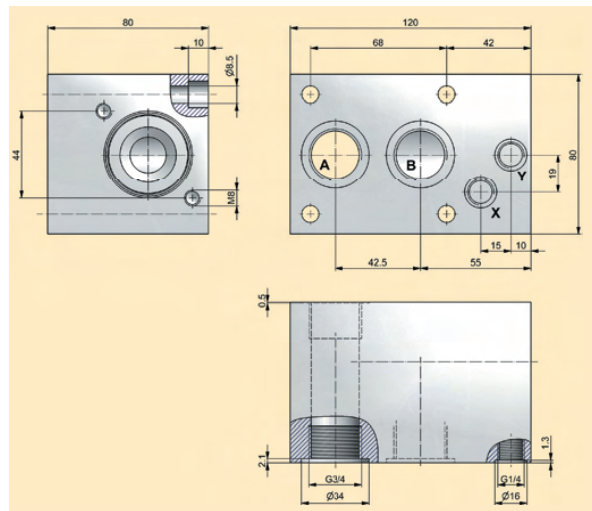
18 Flow meter SCQ analogue

Dimensional drawings

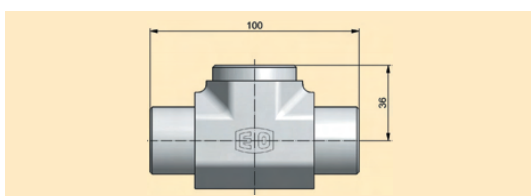
Connection block SCAQ-060



Connection block SCAQ-150



IN-LINE adapter SCAQ-GIR1/2



18 Flow meter SCQ analogue

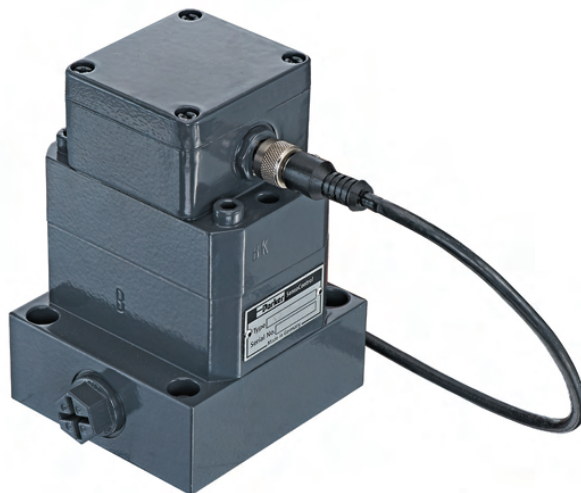
Supply range and accessories

SCQ flow sensor (0...±60 l/min)		Order code
0...60 l/min (incl. spacer ring)		SCQ-060-0-02
Spacer ring (O-ring SCQ-060)		SC-910
Seal set for SCQ-060		SC-911
SCAQ-IN-LINE adapter (60 l/min)		Order code
1/2" BSPP female (A-B) and M24 female for SCQ-060		SCAQ-GIR1/2CFX
SCAQ connector block (60 l/min)		Order code
1/2" BSPP female (A-B) and M24 female for SCQ-060		SCAQ-060
with screw plug:		
1/2" BSPP male port (A-B)		SCQ-R1/2-ED
SCQ flow sensor (0...±150 l/min)		Order code
0...150 l/min		SCQ-150-0-02
Seals for SCQ-150		SC-912
SCAQ connector block (150 l/min)		Order code
3/4" BSPP female (A-B) and M42 female for SCQ-150		SCAQ-150
with screw plugs: 3/4" BSPP male (A-B)		SCQ-R3/4-ED
SCK analogue connection cable		Order code
3 m (male 5 pin - male 5 pin)		SCK-102-03-02
5 m (male 5 pin - male 5 pin)		SCK-102-05-02
5-m extension cable (male 5 pin - female 5 pin)		SCK-102-05-12
SCQ flow sensor with calibration certificate as per ISO 9001		Order code
0...60 l/min (incl. spacer ring)		K-SCQ-060-0-02
0...150 l/min		K-SCQ-150-0-02

19 Volume meter SCVF

Volume meter SCVF

- Volume meter
- 4 measuring ranges of up to 300 l/min
- Measuring accuracy $\pm 0.5\%$ FS
- Pressure resistant up to 400 bar
- High viscosity range
- Low noise level



Volume meter for high-precision flow measurement in hydraulic plants

Function

The SCVF is a volume meter. The fluid flow drives a precision-manufactured pair of gearwheels.

The SCVF operates in a wide viscosity range. A variety of seals make many applications possible.

Applications

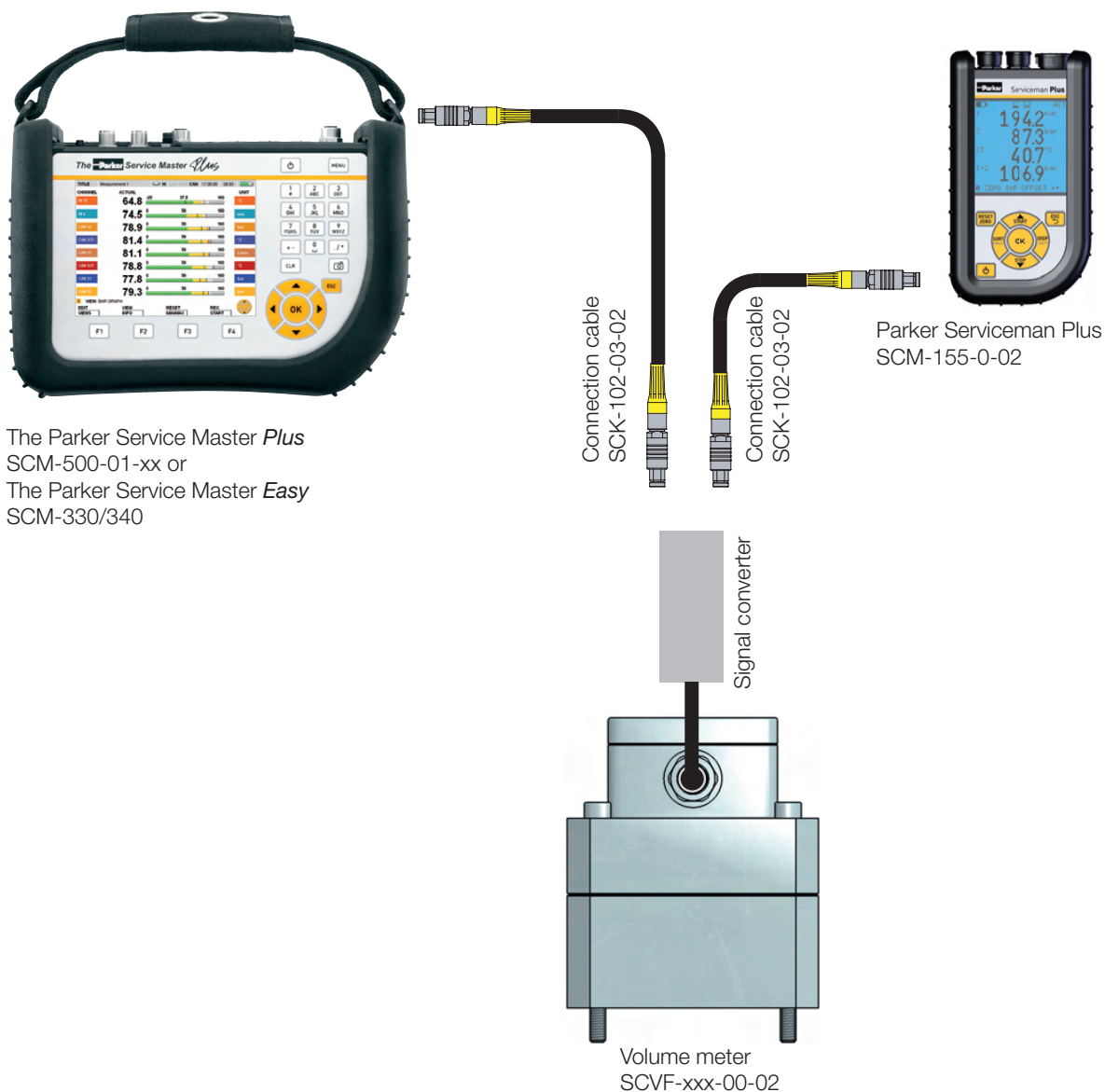
The high viscosity range enables measuring of all fluids that are pumpable and have a certain degree of lubricity:

- Mineral oils
- Hydraulic oils
- Greases
- Brake fluids (EPDM sealing)
- Skydrol (special version)

The volume meter SCVF is the ideal solution for accurately measuring flow across a large viscosity range.

19 Volume meter SCVF

Function specifications



The Parker Service Master *Plus*
SCM-500-01-xx or
The Parker Service Master *Easy*
SCM-330/340

Parker Serviceman Plus
SCM-155-0-02

Connection cable
SCK-102-03-02

Connection cable
SCK-102-03-02

Signal converter

Volume meter
SCVF-xxx-00-02

Sensors



19 Volume meter SCVF

Technical data

Type	SCVF-015	SCVF-060	SCVF-150	SCVF-300
Flow range Q_N (l/min)	0.2...15	0.4...60	0.6...150	1.0...300
Maximum measuring range Q_{max} (l/min)	16.5	66	165	330
Operating pressure P_N (bar)	400	400	315	315
Overload pressure P_O (bar)	480	480	350	350
Connection	G3/8 BSPP	G1/2 BSPP	G1 BSPP	G1 BSPP
Weight (kg)	3.8	8.1	23	27

Accuracy

Deviation from characteristic curve $\pm 0.5\%$ FS from 20 cSt.

Response time after 400 ms

Material

Housing Casting GGG40

Seal FKM

Parts in contact with media FKM, steel, GGG40

Type of protection IP65 EN 60529

Ambient conditions

Ambient temperature (°C) -15...+80

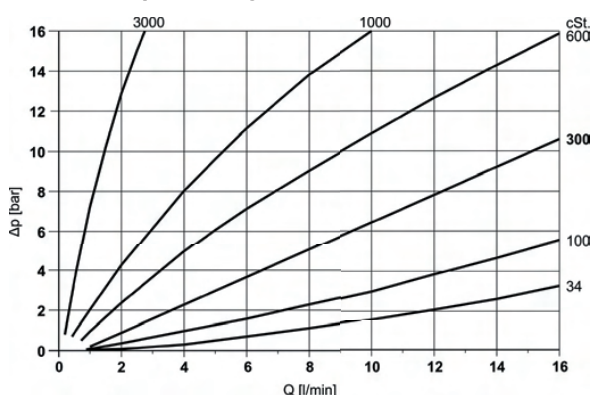
Storage temperature (°C) -15...+80

Media temperature (°C) -15...+120

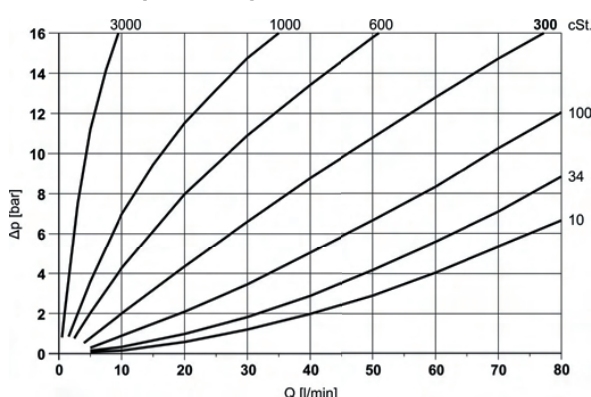
Viscosity range from approx. 1 cSt.

Filtration 20 μ m

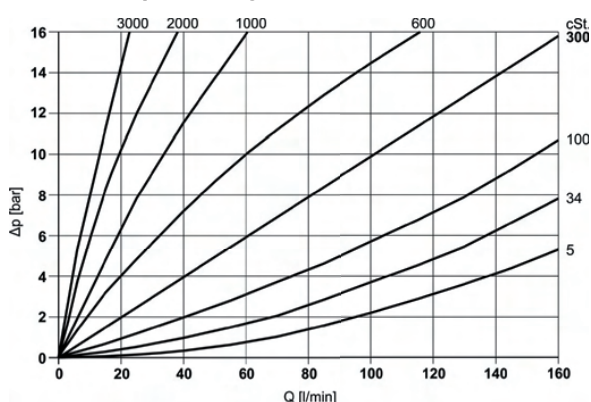
SCVF-015 Δp viscosity



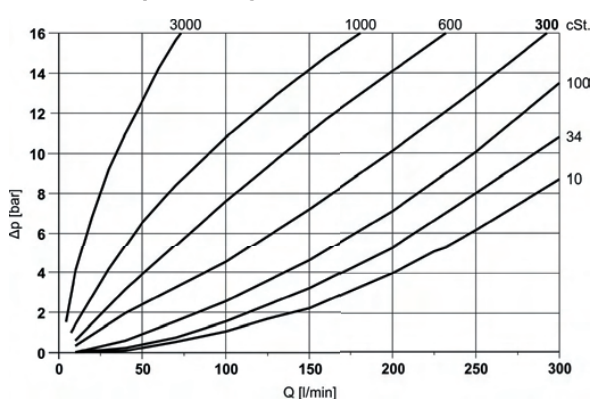
SCVF-060 Δp viscosity



SCVF-150 Δp viscosity

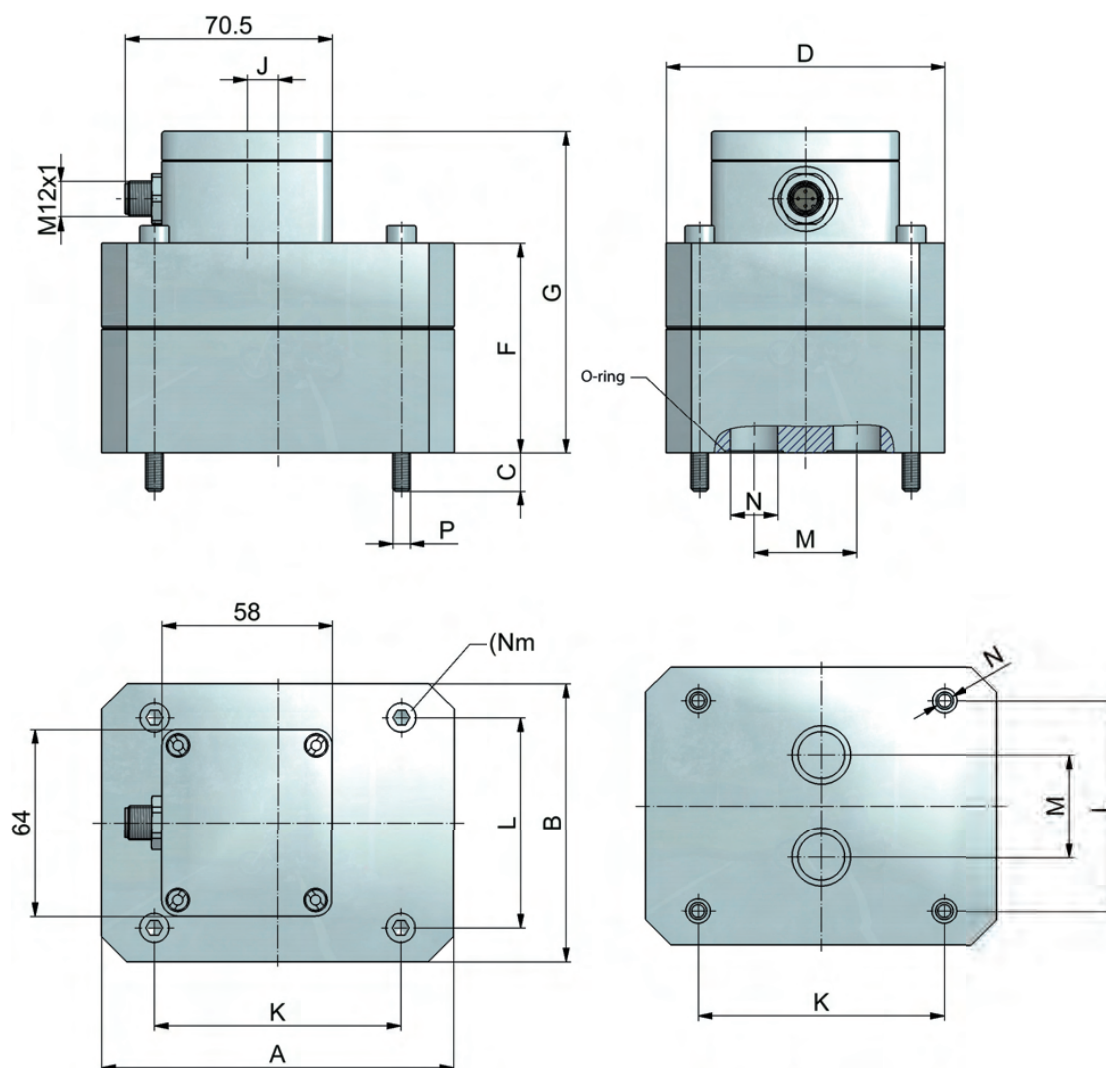


SCVF-300 Δp viscosity



19 Volume meter SCVF

Dimensional drawings



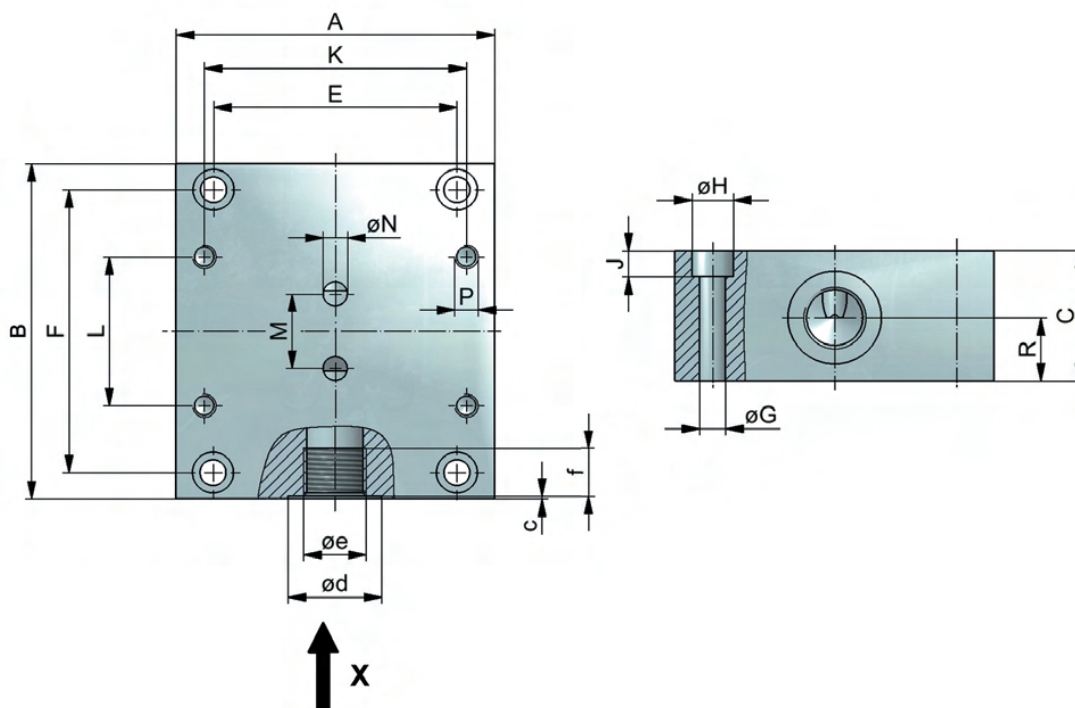
Type	Weight (kg)	Torque (Nm)	A	B	C	D	F	G	J	K	L	M	øN	P
SCVF-015	2	14	85	60	13	60	57	95	-	70	40	20	9	M6
SCVF-060	5.2	35	120	95	13	95	72	110	10,5	84	72	35	16	M8
SCVF-150	9	120	170	120	18	120	89	127	46,5	46	95	50	25	M12
SCVF-300	13	120	170	120	18	120	105	143	40	46	95	50	25	M12

All dimensions in mm



19 Volume meter SCVF

Dimensional drawings and order codes



Type	(kg)	A	B	C	E	F	øG	øH	J	K	L	M	øN	P	R	C	ød	øe BSPP	F
SCVF-015	1.8	85	90	35	65	76	7	11	7	70	40	20	6.5	M6/t = 14	17	0.7	25	G3/8	13
SCVF-060	2.9	100	120	37	80	106	7	11	7	84	72	35	12	M8/t = 18	17.5	0.7	29	G1/2	15
SCVF-150 SCVF-300	14	160	165	80	140	145	9	15	9	46	95	50	25	M12/t = 24	28	1	42	G1	19

All dimensions in mm

Supply range and accessories

SCVF incl. connection plate with signal converter	Order code
0.1...015 l/min	SCVF-015-00-02
0.4...060 l/min	SCVF-060-00-02
0.4...150 l/min	SCVF-150-00-02
1.0...300 l/min	SCVF-300-00-02

SCK analogue connection cable	Order code
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5 m (male 5 pin - male 5 pin)	SCK-102-05-02
5-m extension cable (male 5 pin - female 5 pin)	SCK-102-05-12



20 Connection cables SCK

Connection cables SCK

- Compact size
- Interference-free
- Compatible with all diagnosis sensors and diagnostic measuring devices
- Push-pull plug
- Various lengths available
- Oil-resistant material

Cables for CAN bus sensors

Parker CAN bus cables are used to connect Parker CAN bus sensors to **The Parker Service Master Plus** SCM-500 or **The Parker Serviceman Plus** SCM-155-2-05.

The quick-plug-screw connection SPEEDCON® makes connecting simple and secure.

CAN connection cable

SCK-401-xx-4F-4M



CAN Y-junction

SCK-401-0.3-Y



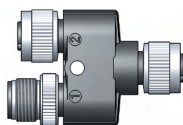
CAN T-junction

SCK-401-T



CAN Y-junction

SCK-401-Y



CAN terminating resistor

SCK-401-R



Cables for analogue sensors

The **SensoControl**® diagnostic cables were designed for use in harsh working conditions.

5-pin version

The 5-pin cables with push-pull plugs are suitable for all 5-pin analogue connections.

4-pin version

Diagnostic cables with 4-pin plugs are only compatible with the Serviceman types SCM-150-1-01/02 and SCM-152-2-08.

Connection cable (5 pin)

SCK-102-xx-02



Extension cable (5 pin)

SCK-102-05-12



Adapter

SCK-002-08

(for connecting 4-pin sensors to newer devices)



Connection cable (4 pin)

SCK-102-02-08

(for connecting newer analogue sensors to devices with 4-pin connection)



SPEEDCON® is a registered trademark of PHOENIX CONTACT GmbH & Co. KG

20 Connection cables SCK

Technical data

Plug housing		
Material		Cu alloy
Surface		Chrome plated
Protection class (while plugged in)		analogue IP54 CAN IP67
Cable		
Sheathing		PUR
Colour		black
Permitted temperature	Stationary operation Non-stationary operation	-20 ... +70 °C -5 ... +70 °C
Shielding		Cu meshed shield

Supply range and accessories

SCK analogue connection cables	Order code
3 m (male 5 pin - male 5 pin)	SCK-102-03-02
5 m (male 5 pin - male 5 pin)	SCK-102-05-02
5-m extension cable (male 5 pin - female 5 pin)	SCK-102-05-12
Adapter (female 4 pin - male 5 pin)	SCK-002-08
2 m (4 pin) is only for the older versions of the Serviceman (SCM-150-1-01/02 and SCM-152-2-08)	SCK-102-02-08

SCK connection cables CAN*	Order code
0.5 m (male 5 pin - female 5 pin)	SCK-401-0.5-4F-4M
2 m (male 5 pin - female 5 pin)	SCK-401-02-4F-4M
5 m (male 5 pin - female 5 pin)	SCK-401-05-4F-4M
10 m (male 5 pin - female 5 pin)	SCK-401-10-4F-4M
20 m (male 5 pin - female 5 pin)	SCK-401-20-4F-4M
CAN Y-junction	SCK-401-Y
CAN Y-junction incl. 0.3-m cable	SCK-401-0.3-Y
CAN T-junction	SCK-401-T
Terminating resistor** CAN (female 5 pin - female 5 pin)	SCK-401-R

* Other lengths available on request

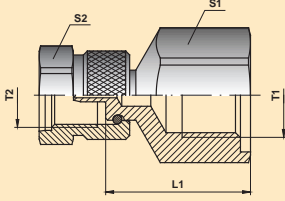
** Each CAN network requires a terminating resistor.

Accessories



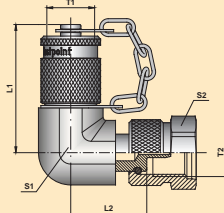
21 Diagnostic adapters SCA

Diagnostic adapter SCA



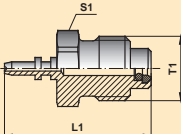
Diagnostic adapters

Order code	PN	Pmax	Pburst	T1	T2	L1	S1	S2
SCA-1/4-EMA-3	630 bar	1,200 bar	2,000 bar	1/4" BSPP	M16x2	32	27	22
SCA-1/2-EMA-3	630 bar	800 bar	1,200 bar	1/2" BSPP	M16x2	36	30	22
SCA-1/2-EMA-3-HP	630 bar	1,200 bar	2,000 bar	1/2" BSPP	M16x2	36	32	22



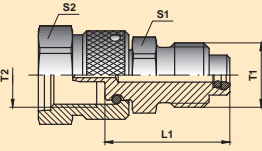
90° diagnostic adapter with measuring coupling

Order code	PN	Pmax	Pburst	T1	T2	L1	L2	S1	S2
SCA-90-EMA-3	630 bar	800 bar	1,200 bar	M16x2	M16x2	52	28.5	19	22

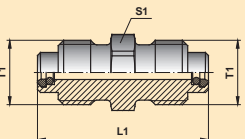


Diagnostic coupling

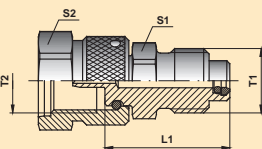
Order code	PN	Pmax	Pburst	T1	T2	L1	S1	S2
SCA-EMA-3/1	630 bar	800 bar	1,200 bar	M16x2	—	37	17	—
SCA-EMA-3/2	630 bar	800 bar	1,200 bar	M16x2	M12x1.65	31	17	22
SCA-EMA-3/3	630 bar	800 bar	1,200 bar	M16x2	M16x2	43	17	—
SCA-EMA-3/4	630 bar	800 bar	1,200 bar	M16x2	M16x1.5	31	17	22



SCA-EMA-3/2



SCA-EMA-3/3



SCA-EMA-3/4



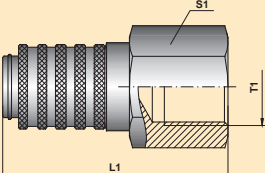
Note pressure ranges!

Adapters may only be used in connection with products listed in this catalog.

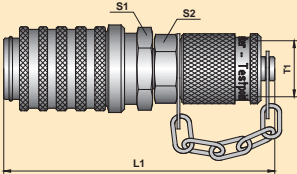


21 Diagnostic adapters SCA

Technical data and order codes



SCA-1/2-PQC



SCA-EMA-3/PQC

Parker diagnostic quick-connection coupling

Order code	PN	Pmax	Pburst	T1	L1	S1	S2
SCA-1/4-PQC	400 bar	600 bar	1,000 bar	1/4" BSPP	—	—	—
SCA-1/2-PQC	400 bar	600 bar	1,000 bar	1/2" BSPP	59	27	—
SCA-EMA-3/PQC	400 bar	600 bar	1,000 bar	M16x2	78	21	17



Note pressure ranges!

Adapters may only be used in connection with products listed in this catalog.



22 Equipment cases for Parker handheld measuring devices

Equipment cases for Parker handheld measuring devices



SCC-120



SCC-DRV-300




SCC-200



SCC-500

Accessories

 All equipment cases are supplied without contents



22 Equipment cases for Parker handheld measuring devices

Equipment cases for Parker handheld measuring devices

SCC equipment cases	Order code
provide room for the following components:	
2 ServiceJuniors with EMA adapters	SCC-120
The Parker Service Master <i>Easy</i> , 6 SCK, 8 SCPT, 1 SCT, 1 SCRPM, 1 SCFT-015/060/150/300/600 or 1 SCFT-150-DRV	SCC-DRV-300
1 Parker Serviceman Plus, 3 SCP or 3 SCPT, 2 SMA-3, 3 SCK	SCC-200
1 The Parker Service Master <i>Plus</i> and 1 The Parker Service Master <i>Easy</i> , 12 SCK, 8 SCPT, 1 SCT, 1 SCRPM, 1 SCFT-015/060/150/300/600/750 or 1 SCFT-150-DRV	SCC-500



All equipment cases are supplied without contents



Index of order codes

K		K-SCT-150-0-02	56	SCFT-150-DRV	78
K-SCFTT-xxx-C2-05	74	K-SCT-190-00-02	56	SCFT-xxx-02-02	69
K-SCFT-xxx-02-02	69	K-SCT-190-04-02	56	SCFTT-150-DRV-C2-05	78
		K-SCT-190-C0-05	60	SCFTT-xxx-C2-05	74
		K-SCT-190-C4-05	60		
K-SCJN-KIT-xxx	12			SCHP-KIT-060-xx-01	32
K-SCJN-xxx-01	12			SCHP-KIT-700-xx-01	32
		S		SCHP-SEALSET	33
K-SCKIT-155-0-00	16	SC-910	84		
K-SCKIT-155-0-600	16	SC-911	84	SCJN-KIT-xxx	12
K-SCKIT-155-0-PQ	16	SC-912	84	SCJN-RUBBER	12
K-SCKIT-155-2-600	16			SCJN-xxx-01	12
K-SCKIT-330-00	20	SCA-1/2-EMA-3	92	SCJN-xxx-02	12
K-SCKIT-340-00	20	SCA-1/2-EMA-3-HP	92	SCJN-xxx-03	12
K-SCKIT-340-PTQ	20	SCA-1/2-PQC	93		
K-SCKIT-500-01-00	27	SCA-1/4-EMA-3	92	SCK-002-08	91
K-SCKIT-500-01-01	27	SCA-1/4-PQC	93	SCK-009	27
		SCA-90-EMA-3	92	SCK-102-02-08	91
K-SCM-155-0-02	16	SC-ACC-01	27	SCK-102-03-02	91
K-SCM-330-2-02	20	SCA-EMA-3/1	92	SCK-102-05-02	91
K-SCM-340-2-02	20	SCA-EMA-3/2	92	SCK-102-05-12	91
K-SCM-500-01-00	27	SCA-EMA-3/3	92	SCK-315-02-34	20
K-SCM-500-01-01	27	SCA-EMA-3/4	92	SCK-315-02-36	16
		SCA-EMA-3/PQC	93	SCK-318-05-21	20
K-SCPT-xxx-02-02	48	SCA-GMA3/20S/T	56	SCK-401-0.3-Y	91
K-SCPT-xxx-02-02-PQC	48			SCK-401-0.5-4F-4M	91
K-SCPT-xxx-C2-05	51	SCAQ-060	84	SCK-401-02-4F-4M	91
K-SCPT-xxx-C2-05-PQC	51	SCAQ-150	84	SCK-401-05-4F-4M	91
		SCAQ-GIR1/2CFX	84	SCK-401-10-4F-4M	91
K-SCP-xxx-74-02	42			SCK-401-20-4F-4M	91
K-SCP-xxx-74-02-PQC	42	SCA-SMA3-1000-1/4MA71	33	SCK-401-4M	27
K-SCP-xxx-C4-05	45	SC-BAT-340	20	SCK-401-R	91
K-SCP-xxx-C4-05-PQC	45			SCK-401-T	91
		SCC-120	12, 95	SCK-401-Y	91
K-SCQ-060-0-02	84	SCC-200	16, 95		
K-SCQ-150-0-02	84	SCC-400	33		
		SCC-410	33		
K-SCRPM-220	63	SCC-500	27, 95		
		SCC-DRV-300	20, 95		



Index of order codes

SCKIT-155-0-00	16	SCP-xxx-74-02	42
SCKIT-155-0-600	16	SCP-xxx-74-02-PQC	42
SCKIT-155-0-PQ	16	SCP-xxx-C4-05	45
SCKIT-155-2-00	16	SCP-xxx-C4-05-PQC	45
SCKIT-155-2-600	16		
SCKIT-330-00	20	SCQ-060-0-02	84
SCKIT-340-00	20	SCQ-150-0-02	84
SCKIT-340-PTQ	20	SCQ-R1/2-ED	84
SCKIT-500-00-00	27	SCQ-R3/4-ED	84
SCKIT-500-01-00	27		
SCKIT-500-01-01	27	SCRPM-220	63
		SCRPMA-010	63
SCLV-DISC-300	78	SCRPMA-001	63
SCLV-DISC-800	78	SCRPMA-002	63
SCLV-PTQ-300	78		
SCLV-PTQ-300-C2-05	78	SCSN-450	20
SCLV-PTQ-750	78	SCSN-460	27
SCLVT-PTQ-750-C2-05	78		
		SCT-150-0-02	56
SCM-155-0-02	16	SCT-150-04-02	56
SCM-155-2-05	16	SCT-190-04-02	56
SCM-330-2-02	20	SCT-190-C0-05	60
SCM-340-2-02	20	SCT-190-C4-05	60
SCM-500-00-00	27	SCT-400-K-01	56
SCM-500-01-00	27		
SCM-500-01-01	27	SCTA-400-02	56
SCMA-FCU-600	38	SCVF-015-00-02	89
SCMA-VADC-600	38	SCVF-060-00-02	89
		SCVF-150-00-02	89
SCNA-USB-CAR	16	SCVF-300-00-02	89
SCPT-xxx-02-02	48	SMA1/4MA-1/8M-1000BLCF	33
SCPT-xxx-02-02-PQC	48		
SCPT-xxx-C2-05	51		
SCPT-xxx-C2-05-PQC	51		

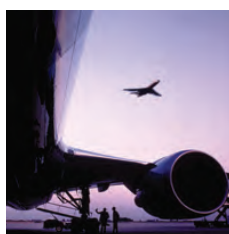


For your notes



Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion or control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further information call 00800 27 27 5374



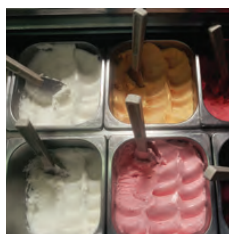
AEROSPACE

Key Markets

- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

Key Products

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



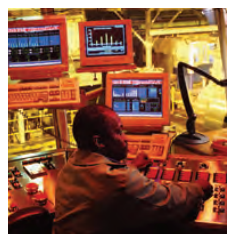
CLIMATE CONTROL

Key Markets

- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products

- CO₂ controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



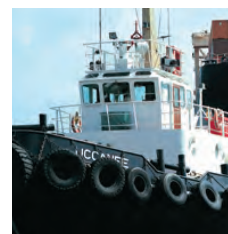
ELECTROMECHANICAL

Key Markets

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydraulic actuation systems
- Electromechanical actuation systems
- Human machine interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions



FILTRATION

Key Markets

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



FLUID & GAS HANDLING

Key Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Key Products

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



HYDRAULICS

Key Markets

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

Key Products

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



PNEUMATICS

Key Markets

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors



PROCESS CONTROL

Key Markets

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



SEALING & SHIELDING

Key Markets

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

Key Products

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management



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