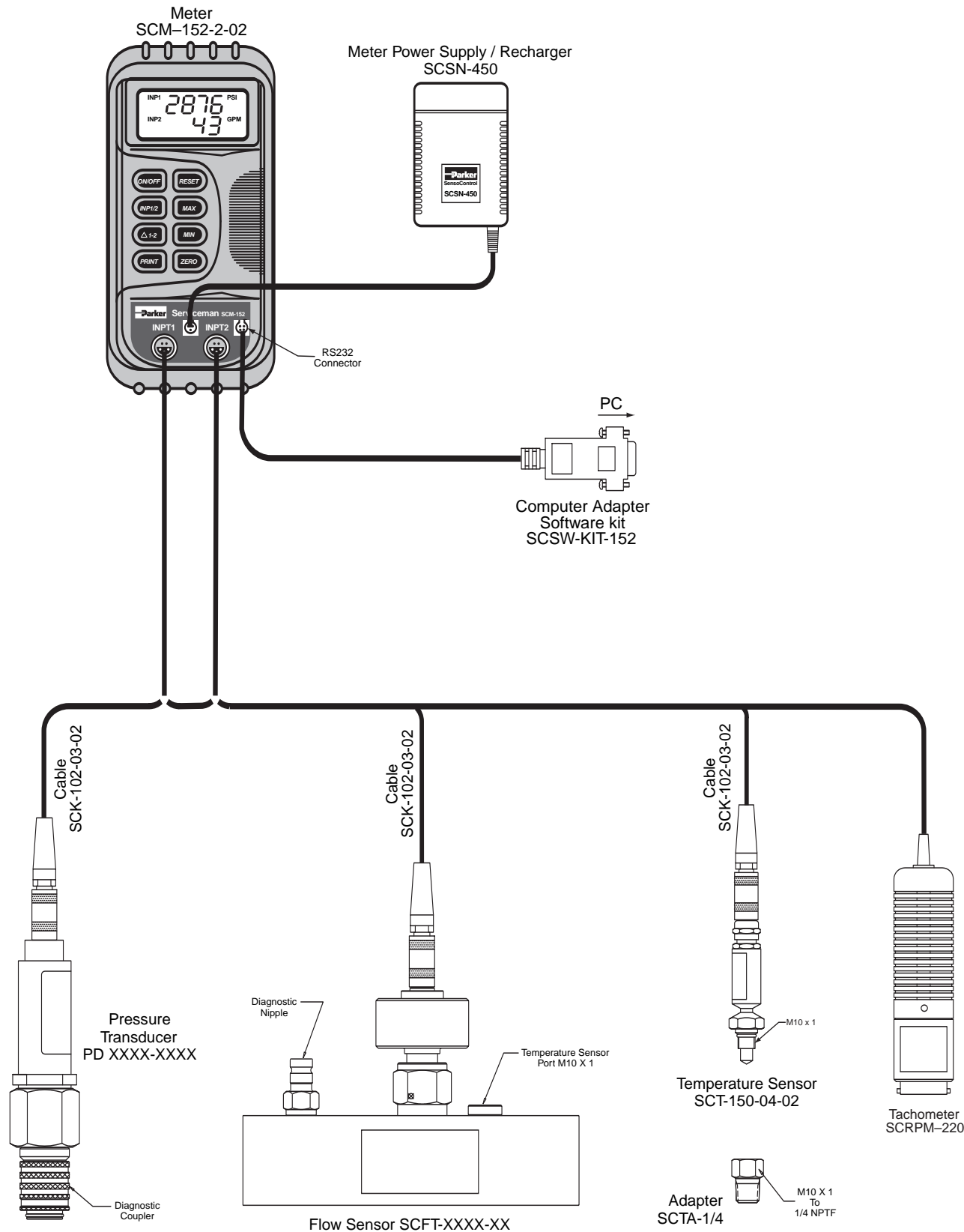


## SensoControl Serviceman Schematic

Measures and Documents Flow, Pressure, Temperature and Rotation speed



## Serviceman Test Meter Kit



### Kit Contents:

Case ..... SCC-150  
 Serviceman Meter ..... SCM-152-2-02  
 Transducers (Quantity 1 or 2) ..... (See Below)  
 Cable (Quantity 1 or 2) ..... SCK-102-03-02  
 Power Supply – Meter\* ..... SCSN-450  
 Instruction Manual\* ..... SCM-152-TM

\* Included with Serviceman Meter

### Code for Ordering Serviceman Meter Kits:

**PDS3 - X - XX - XX** Transducer Pressure Range  
 (Choose one or two)

Diagnostic Style

CODE	DESCRIPTION
2	PD Style
4	PDP Style
6	EMA3 Style (Female)

CODE	PRESSURE	COLOR
01	-14.5 – +145 PSI	Blue
06	0 – 870 PSI	Green
15	0 – 2175 PSI	Yellow
40	0 – 5800 PSI	Orange
60	0 – 8700 PSI	Red

## Additional Transducers

### Code for Ordering Separately:

**PD XXXXXX - XXXX**

Pressure Range

Diagnostic Style

CODE	DESCRIPTION
TA	PD Style
PTA	PDP Style
TEMA3	EMA3 Style (Female)

CODE	PRESSURE	COLOR
0100	-14.5 – +145 PSI	Blue
0600	0 – 870 PSI	Green
1500	0 – 2175 PSI	Yellow
4000	0 – 5800 PSI	Orange
6000	0 – 8700 PSI	Red

**PTA - 10000**

Pressure Range

Diagnostic Style

DIRECT PORT ONLY  
 (1/2-14BSPP Thread)

PRESSURE	COLOR
0 – 14500 PSI	Red

## Flow Sensors

### Code for Ordering Separately:

**SCFT-XXXX - XXX**

Diagnostic Style

Flow Range

CODE	FLOW RATE
0004	0.2 – 4 GPM (1 – 15 l/min)
0116	1 – 16 GPM (4 – 60 l/min)
0380	3 – 80 GPM (10 – 300 l/min)
5160	5 – 160 GPM (20 – 600 l/min)

CODE	DESCRIPTION
PD	PD Style
PDP	PDP Style
EMA	EMA Style

Bulletin 3800-SMN



Parker Hannifin Corporation  
 Quick Coupling Division  
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## Serviceman™ Diagnostic Meter

Bulletin 3800-SMN  
 February, 2006

Hand-held Diagnostic Meter to Measure Pressure, Temperature, Flow and Rotational Speed for Hydraulic and Pneumatic Systems

- Easy operation •
- Rugged design •
- Compact Dimensions •
- Two line display •
- Auto sensor recognition •
- MIN/MAX Memory •
- Pressure differential •
- External power supply •
- Data output for PC •



The Serviceman SCM-152 from Parker is a portable diagnostic measuring system – an excellent alternative to conventional mechanical pressure gages – a very rugged, durable test meter that can withstand even the most demanding environmental conditions.

The Serviceman meter uses the latest in sensor recognition technology which eliminates the need for meter adjustment. It's powered by a rechargeable Ni-MH battery system or a 120 volt external power supply for continuous operation

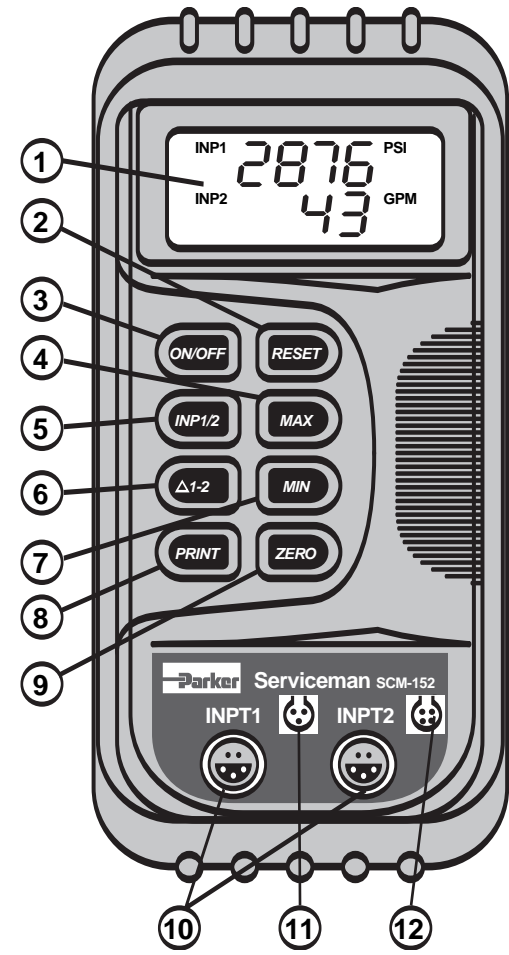
Using Serviceman software (compatible with Windows 98 and newer operating systems) the SCM-152 quickly interfaces with an Excel spreadsheet.

The Serviceman field kit is the ideal set of diagnostic tools for maintenance and service personnel in the industrial, mobile and agricultural markets. These units help reduce downtime by recording the best preventative maintenance and diagnostic data available.

Parker Hannifin provides the most complete line of hydraulic and pneumatic diagnostic equipment available today. For more information contact the Quick Coupling Division or your local distributor.



## SensoControl Serviceman Diagnostic Meter



### Function Descriptions

- Two Line Measurement Display
- RESET resets minimum and maximum values to zero
- ON/OFF Switch
- MAX displays maximum value since meter was last reset or turned on
- INP1/2 selects whether meter will display measurement from Input 1 or Input 2
- I1-I2 displays the differential value of Input 1 minus Input 2
- MIN displays minimum value since meter was last reset or turned on
- PRINT sends displayed measurements to PC or printer
- HOLD resets display to zero
- Two Inputs (5 pin)
- External Power Supply Socket
- Data Output via RS232 interface to transmit measured values to PC

### Serviceman Technical Data

#### Meter

- 2 Line Display Shows Both Inputs
- 4 Digit LCD Text Display
- Display of Pressure, Temperature, Flow and Rotational Speed
  - Pressure in PSI and Bar
  - Temperature in °F and °C
  - Flow in GPM and l/min.
  - Rotational Speed in RPM

#### Housing

- ABS Plastic Housing
- Protective Rubber Cover
- Carrying Strap
- Integral Stand

#### Inputs

- Two 5-pin push-pull Inputs
- 0-3 Volts (R=470 k )
- 12 Bit A/D Converter
- Automatic Sensor Recognition
- 2 ms Scanning Rate

#### Ambient Conditions

- Operating Temperatures 32°F to 122°F (0°C to 50°C)
- Storage Temperatures -4°F to 140°F (-20°C to 60°C)

#### Output

- RS232 Interface to transfer measured values to a PC. The SCSW-KIT-152 software and adapter kit is required for data transfer to a PC.

#### Power Requirements

- 9 Volt Rechargeable Ni-MH Battery
- Recharge circuit for use with external power supply.
- 5 Hour Battery Life

#### Special Note

All Parker SensoControl hand-held diagnostic meters are now equipped with the same 5-pin push-pull style connector ports.

This means accessories such as pressure sensors, temperature sensors, flow meters, tachometers and cables are all interchangeable between Serviceman and the Parker Service Master meters.

## Pressure Transducer Options

- Six measurement ranges: Vacuum to 14,500 PSI
- Color coded for easy identification
- Corrosion resistant stainless steel housing
- Accuracy of .5% Full Scale (FS)
- Available with PD, PDP or EMA style diagnostic couplings



### Transducer Technical Data

	PD ± .5% -0100	PD ± .5% -0600	PD ± .5% -1500	PD ± .5% -4000	PD ± .5% -6000	PD ± .5% -10000
Measuring Range (Pressure)	-14.5 to 235 PSI	0 to 870 PSI	0 to 2175 PSI	0 to 5800 PSI	0 to 8700 <sup>(1)</sup> PSI	0 to 14500 <sup>(2)</sup> PSI
Color Code	Blue	Green	Yellow	Orange	Red	Red
Measuring Range (Temp.)	-13°F to 221°F	-13°F to 221°F	-13°F to 221°F	-13°F to 221°F	-13°F to 221°F	-13°F to 221°F
Max. Overload Pressure	290 PSI	1450 PSI	3625 PSI	14500 PSI	14500 PSI	14500 PSI
Output Signal (Volts)	-0.2 to 2	0 to 3	0 to 3	0 to 3	0 to 3	0 to 3
Hysteresis (% FS Typical)	0.1	0.05	0.1	0.08	0.05	0.05
Repeatability (%FS Typical)	0.08	0.13	0.13	0.1	0.1	0.1
Non-conformity (%FS)	0.25	0.2	0.2	0.28	0.25	0.25
Response Time	1 ms	1 ms	1 ms	1 ms	1 ms	1 ms
Excitation Voltage	7-12 VDC	7-12 VDC	7-12 VDC	7-12 VDC	7-12 VDC	7-12 VDC

- (1) Maximum Rated Pressure for PD Series Couplers is 6000 PSI.  
 (2) Maximum Rated Pressure for EMA Series Couplers is 9000 PSI.

#### Materials of Construction

Transducer . . . . .Stainless steel  
 Diaphragm . . . . .Stainless steel  
 Coupler . . . . .Zinc Plated steel  
 Seal . . . . .Fluorocarbon

#### Output

Accuracy . . . . .0.5% FS  
 Load . . . . .2m ohms  
 Response time . . . . .<1 ms  
 Output signal to noise . . . . .0.1%FS  
 Resonant frequency . . . . .100 KHz

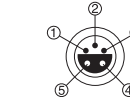
#### Temperature Range

Working . . . . .-4° to 185°  
 Fluid . . . . .-13° to 221°  
 Storage . . . . .-40° to 257°

#### Voltage Requirement

7 to 12 VDC excitation voltage  
 Permissible ripple . . . . .±2% ss  
 Current requirement . . . . .5 mA

#### Cable End (Pin Out)



Pin	Mark	Wire Colors
1	P	yellow
2	T	white
3	+	brown
4	-	green
5	SK	grey

## Accessories to Expand the Functionality of the Serviceman



**SCRPM Tachometer**  
 for Serviceman and the Parker Service Master Meters. Displays a precision measurement of rotational speed. 5-pin push-pull style connector.  
 Part Number SCRPM-220

**Technical Data**  
 Measuring Range . . . . .20 – 10,000 RPM  
 Measuring Distance . . . . .0.1 – 19.5 in  
 Accuracy . . . . .±0.5%  
 Excitation Voltage . . . . .7 – 9 VDC  
 Output Signal . . . . .0 – 3 VDC  
 Resolution . . . . ..5 RPM

**Tachometer Adapters**  
 Contact adapter for belt drive/wheel.  
 Part Number SCRPM-001  
 Focus adapter for confined areas.  
 Part Number SCRPM-002



**Temperature Sensor**  
 for Serviceman and the Parker Service Master. Can be used with Parker flow sensors or with an SCTA-1/4 port adapter.  
 Accuracy: ± 1.5% Full scale  
 Temperature range: -13°F to 257°F (-25°C to 125°C)  
 Part Number SCT-150-04-02



**5 pin to 5 pin Cables**  
 Flow sensor, transducer and temperature probe cables for both the Serviceman and the Parker Service Master.  
 Length Part Number  
 10 ft (3 m) SCK-102-03-02  
 Extension Cable  
 16.4 ft (5 m) SCK-102-05-12



**Data Cable/Software**  
 for use between the RS232 meter port and a PC  
 Part Number SCSW-KIT-152



**Adapters**  
 See Catalog 3800 for the available adapters used in conjunction with Serviceman diagnostic equipment.

## SensoControl Flow Sensors

These flow sensors are a compact light-weight aluminum diagnostic tool capable of measuring pressure, temperature and flow from a single test point in a hydraulic system.

These flow sensors are designed to be used with a wide variety of hydraulic fluids. This design also minimizes the effect of viscosity changes. These units are manufactured from solid aluminum bar stock and are rated to 6000 PSI\* and temperatures of 0°F to +350°F. They are available in four sizes with flow measuring ranges from 0.2 – 160 GPM.

Flow sensors are provided with a choice of PD, PDP or EMA style diagnostic ports and are designed to be used with Serviceman™ and the Parker Service Master equipment.



### Flow Sensors Technical Data

- Pressure Rating\* . . . . .6000 PSI  
 \* SCFT-7160 is rated to 5000 PSI
- Fluid Temperature Range . . . . .0°F to +350°F
- Ambient Temperature Range . . . . .0°F to +120°F
- Media/Compatibility . . . . .Petroleum Based Fluids  
 (Contact factory for use with water based hydraulic fluids)
- Flow Measurement Accuracy . . . . .±1.0% Full Scale
- Voltage Input . . . . .+7 to 12 VDC  
 (Supplied by SensoControl meter)
- Current Requirement . . . . .6mA
- Response Time . . . . .50 ms
- Viscosity Range . . . . .11 to 50 cSt

### How to Order

Measuring Range	Flow Sensor with PD Nipple	Flow Sensor with PDP Nipple	Flow Sensor with EMA Nipple	Inlet/Outlet Port Configuration	Length inches	Height inches	Width inches
0.2 – 4 GPM (1 – 15 l/min)	SCFT-0004-PD	SCFT-0004-PDP	SCFT-0004-EMA	3/4-16 ORB	5.35	4.61	1.46
1 – 16 GPM (4 – 60 l/min)	SCFT-0116-PD	SCFT-0116-PDP	SCFT-0116-EMA	1 1/16-12 ORB	7.48	5.12	2.44
3 – 80 GPM (10 – 300 l/min)	SCFT-0380-PD	SCFT-0380-PDP	SCFT-0380-EMA	1 5/16-12 ORB	7.48	5.28	2.44
5 – 160 GPM (20 – 600 l/min)	SCFT-5160-PD	SCFT-5160-PDP	SCFT-5160-EMA	1 5/8-12 ORB	8.35	5.91	2.44

### Material Specifications

- Flow Block . . . . .Anodized Aluminum
- Turbine . . . . .Stainless Steel
- Bearings . . . . .Stainless Steel
- Seal Material . . . . .Nitrile
- Electrical Connection . . . . .5 Pin Push-Pull Style