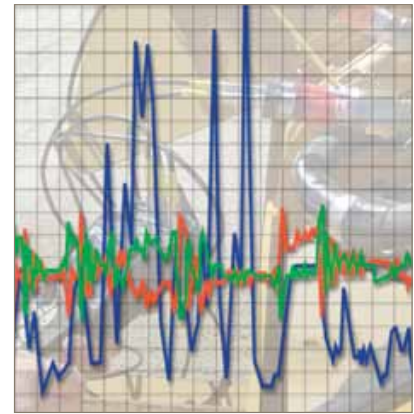


# The Parker Service Master Plus

Diagnostic Instrument



## Measurement, Display, PLUS Analysis:

The Service Master Plus combines innovative technology with increased overall capabilities to bring you a premier diagnostic instrument. This new tool is more than just a meter; it incorporates data measurement, display, and on-screen analysis to provide increased functionality that extends far beyond standard meters currently on the market.

Combining CAN bus sensor communication protocol with traditional analog inputs, the Parker Service Master Plus has 24 channels for a variety of inputs and outputs. In addition, this unit incorporates multiple data interfaces for connectivity and data storage, a variety of display options for user preference and storage capabilities of up to one billion measured values. The Parker Service Master Plus is truly a user-friendly, versatile, diagnostic instrument for any fluid power system.



## Contact Information:

Parker Hannifin Corporation  
**Quick Coupling Division**  
8145 Lewis Road  
Minneapolis, MN 55427

## Model SCM-500-01-01 Features:

- On-screen data measurement, display and analysis
- Combines CAN bus and analog sensor inputs over 24 channels.
- Multiple display options for user convenience: numerical, bar graph, pointer, curve graph etc.
- Multiple connection interfaces: LAN, USB
- Up to one billion data points storage
- Operates with user-friendly SensoWin software
- Measuring parameters: pressure, temperature, flow, rpm, voltage and current



ENGINEERING YOUR SUCCESS.

## The Parker Service Master Plus Diagnostic Instrument

### Technical Data

#### CANbus Inputs

- 2 CANbus networks with 8 inputs each (16 total)
- Scanning Rate: 1 ms
- Input Impedance: 1 k $\Omega$
- M12x1, 5 pin push-in connector

#### Analog Inputs

- 6 Senso Control sensor inputs
- Parker Automatic Sensor Recognition
- Scanning Rate: 1 ms
- Input Impedance: 1 k $\Omega$
- Add two additional sensors with SCMA-VADC adaptor
- 5 pin push-pull connection

#### Digital Input /Output

- Active High 7 to 24 VDC
- Active Low <1 VDC
- Input Impedance: 1 k $\Omega$
- Output Current - 20 mA

#### Analog Inputs for auxiliary sensors

- 2 analog inputs for measuring current and voltage.
- Scanning Rate: 1ms
- Voltage Measuring Range: -10 to +10VDC
- Current Measuring Range: 0/4 to 20 mA.
- Configurable as FAST-mode analog inputs, .1ms scanning rate

#### Input Module Accuracy

- Measurement Accuracy:  $\pm 0,25$  % FS
- Temp Error: 0.02% FS per  $^{\circ}\text{C}$

#### Display

- Visible Area: 115 x 86 mm
- Resolution 640 x 480 pixels

#### Interfaces

- USB device type B
- USB host type A
- 10/100 base T Ethernet RJ45

#### Functions

- Measuring mode: Start/stop, points, trigger
- Measurement: ACT, MIN and MAX
- Measurement display: Numerical, bar graph, pointer, curve graph
- Trigger: Slope, manual, level, window, time, logic, Pre-Trigger
- Remote operation via the Ethernet
- Acoustic notification at any incident

#### Measured value storage

- ~4,000,000 points per measurement
- 1,000,000,000 points total
- On board storage 64 MB
- External: Micro SD memory card slot
- External: USB mass storage device

#### Ambient Operating Conditions

- Ambient temperature: 32 to 112 F $^{\circ}$
- Storage temperature: -10 to 140 F $^{\circ}$
- Relative humidity: < 80 %
- Environmental test: IEC60068-2-32 (1 m, free fall)



#### Type of protection

- IP64 (to EN60529)

#### Power supply

- Internal Lithium ion pack, +7.4 VDC/4500 mAh
- Charge Time: 3h
- Run time with fully charged battery: 8h
- External 110/240 VAC - 24 VDC/2500 mA
- Vehicle adapter cable as accessory (12/24 VDC)

#### Housing/protective sleeve

- Housing material: ABS/PC (thermoplastic)
- Housing protective sleeve material: TPE (thermoplastic elastomer)
- Dimensions (w x h x d): 257 mm x 75 mm x 181 mm
- Weight: 1550 g (basic model)

## Analog Accessories that can be used with the Parker Service Master Plus



**Flow Sensor**  
In-Line turbine flow measurement.  
Flow Range: 0.2 - 160 GPM  
Accuracy: 1% Full Scale  
Part Number  
SCFT-XXXX-XXX (See back panel)



**Pressure Sensor**  
Thin film pressure sensor with attached diagnostic coupler.  
Pressure Range: -14.5 - 8700 psi  
Accuracy: 0.5% Full Scale  
Push-pull cable connection  
Part Number  
PDXXXX-XXXX (See Bul. 3800-SM EZ)



**Temperature Sensor**  
Can be used with Parker flow sensors or with an SCTA-1/4 port adapter.  
Temperature range: -13 $^{\circ}\text{F}$  to 257 $^{\circ}\text{F}$   
[-25 $^{\circ}\text{C}$  to 125 $^{\circ}\text{C}$ ]  
Accuracy:  $\pm 1.5$ % Full scale  
Part Number  
SCT-150-04-02

**CAN-bus Pressure Transducer Options**

- Five measurement ranges:  
Vacuum to 8,700 PSI, standardize
- Automatic sensor recognition
- Accuracy of .5% Full Scale (FS)
- Available with PD or EMA style diagnostic couplings
- Color coded for easy identification



**Transducer Technical Data**



	PD**-0160-CAN	PD**-0600-CAN	PD**-1500-CAN	PD**-4000-CAN	PD**-6000-CAN
Measuring Range	-14.5 to 235 psi	0 to 870 psi	0 to 2175 psi	0 to 5800 psi	0 to 8700 psi
Overload Pressure	434 psi	1740 psi	4350 psi	11600 psi	17400 psi
Burst Pressure	2175 psi	7250 psi	13050 psi	17400	26100
Response Time	1 ms	1 ms	1 ms	1 ms	1 ms
Accuracy (typical)	0.25%	0.25%	0.25%	0.25%	0.25%
Accuracy (max.)	0.50%	0.50%	0.50%	0.50%	0.50%

- Excitation Voltage**.....8-40 VDC
- Electrical Connection**.....5 pin, M 12 x 1 connection
- Port Connection**.....1/2 " BSPP
- Housing**.....Stainless Steel 1.4301
- Seal Material**.....FKM
- Ambient Temperature Range**.....-13 to 185°F
- Max. Fluid Temperature**.....221°F
- Shock Resistance**.....IEC 68-2-29
- Vibration Resistance**.....IEC 68-2-6

<b>Cable End (Pin Out)</b>	
Pin	Item
1	Shield
2	$V_s = 8...40VDC$
3	GND
4	CAN High
5	CAN Low



**SCRPM Tachometer**  
Displays a precision measurement of rotational speed. 5-pin push-pull style connector.  
Rotational Speed Range: 20 to 10,000 RPM  
Part Number  
SCRPM-220



**Voltage Adapter**  
for use with auxiliary sensors  
Input Signal: 0-4A or 0-48VDC  
Output Signal: 0-3 VDC  
Additional Power Supply Input: 18 VDC  
Accuracy: 0.25% FS  
Part Number  
SCMA-VADC-600

**SensoControl CAN-bus Flow Sensors**

- Four measurement ranges: 0.2 to 160 GPM
- Automatic sensor recognition
- Accuracy of 1% FS or IR
- Measures pressure, temperature and flow
- Supplied with diagnostic and temperature measurement port



**Flow Sensors  
Technical Data**

	SCFT-0004-**-CAN	SCFT-0116-**-CAN	SCFT-0380-**-CAN	SCFT-5160-**-CAN
Measuring Range	0.2 to 4 GPM	1 to 16 GPM	3 to 80 GPM	5 to 160 GPM
Accuracy @ 21 cSt	1 % FS	1 % IR	1 % IR	1 % IR
Operating Pressure	5000 psi	5000 psi	5000 psi	4200 psi
Port Connection	1/2" BSPP	3/4" BSPP	1" BSPP	1 1/4" BSPP
Pressure Drop @ FS 21 cSt	21 psi	21 psi	58 psi	72 psi
Response Time	50 ms	50 ms	50 ms	50 ms
Length (in)	5.35	7.48	7.48	8.35
Width (in)	1.45	2.44	2.44	2.44
Height (in)	5.91	6.46	6.61	7.20

**Excitation Voltage**.....8-40 VDC  
**Max. Flow**.....1.1 x Flow Range  
**Overload Pressure**.....1.2 x Operating Pressure  
**Housing Material**.....Aluminum  
**Seal Material**.....FKM

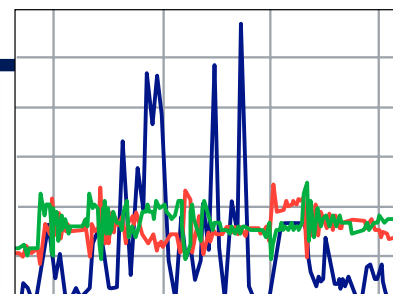
**Wetted Parts**.....Stainless Steel  
**Max Fluid Temperature**.....194°F  
**Ambient Temperature**.....14 to 122°F  
**Filtration**.....25 um  
**Viscosity Range**.....10 to 100 cSt



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



**Adapters**  
 See Catalog 3800 for available adapters.



**SensoWIN™ Software**  
 Transfer data from the Service Master Plus to your PC. Display up to 16 curves simultaneously. Zoom and cursor functions. Calculation functions.  
 Part Number  
 DVD-4082

**Test Instrument Kits**

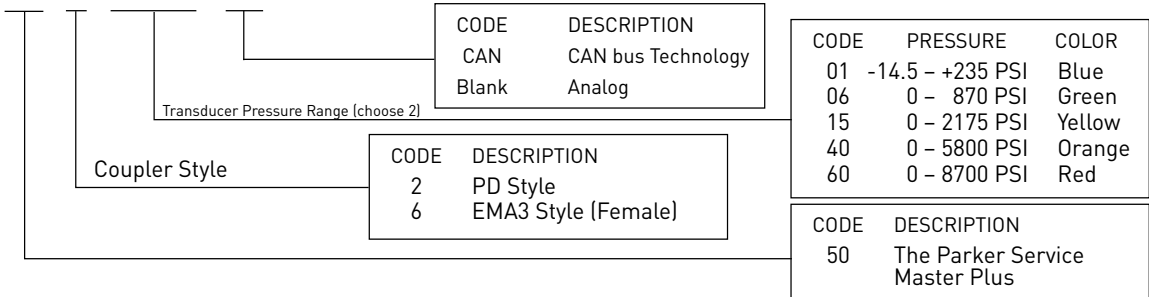
**The Parker Service Master Plus  
500 Test Instrument Kit Includes:**

- Case ..... SCC-500
- The Parker Service Master Plus Instrument. .... SCM-500-01-01
- 2 Transducers ..... (CAN or Analog see Information below)
- 2 Transducer Cables (10 Ft. CAN or Analog) ..... SCK-XXX-XX-XX
- Power Supply ..... SCSN-460
- SensoWin Software and Documentation ..... DVD 4082
- USB Connection Cable ..... SCK-318-02-35
- Quick Start Manual ..... (incl. with the Parker Service Master Plus)



Code for Ordering Kits:

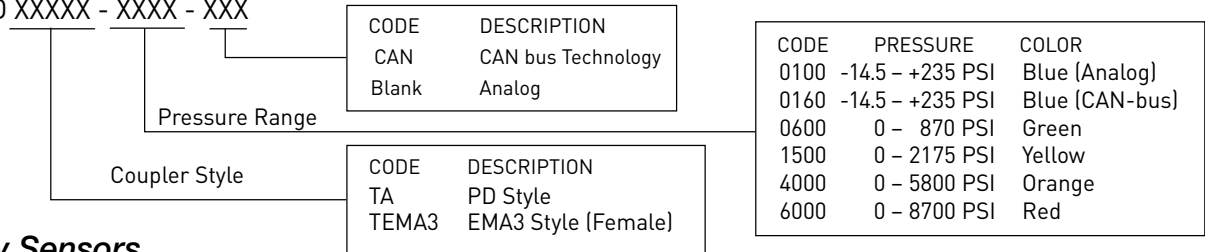
PDSMP 50 - X - XX - XX - XXX



**Additional Transducers**

Code for Ordering Separately:

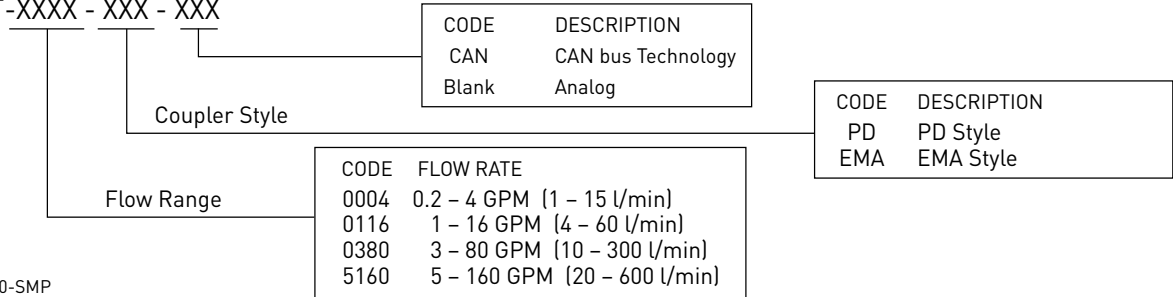
PD XXXXX - XXXX - XXX



**Flow Sensors**

Code for Ordering Separately:

SCFT-XXXX - XXX - XXX



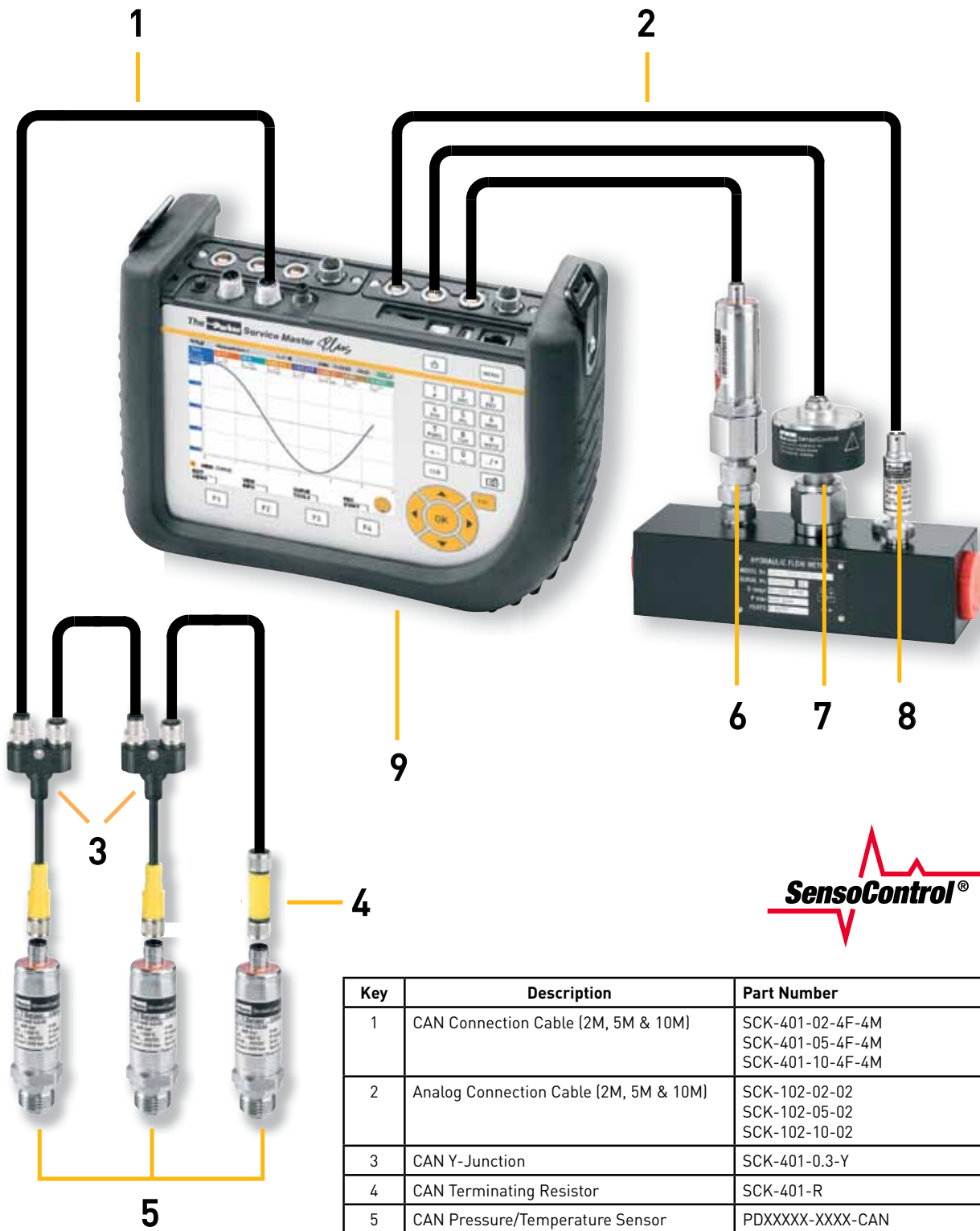
Bulletin 3800-SMP



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Capabilities Schematic



Key	Description	Part Number
1	CAN Connection Cable (2M, 5M & 10M)	SCK-401-02-4F-4M SCK-401-05-4F-4M SCK-401-10-4F-4M
2	Analog Connection Cable (2M, 5M & 10M)	SCK-102-02-02 SCK-102-05-02 SCK-102-10-02
3	CAN Y-Junction	SCK-401-0.3-Y
4	CAN Terminating Resistor	SCK-401-R
5	CAN Pressure/Temperature Sensor	PDXXXX-XXXX-CAN
6	Analog Pressure/Temperature Sensor	PDXXXX-XXXX
7	Analog Flow Sensor	SCFT-XXXX-XXX
8	Analog Temperature Sensor	SCT-150-04-02
9	Service Master Plus Instrument	SCM-500-01-01