CAMERON
A Schlumberger Company

Scanner Model 3100 Flow Computer

Advanced measurement and wireless automation

Applications

- Gas pipelines
- Well sites
- Oil flow lines

Features

- Measures net quantities of
  - Hydrocarbon liquids
  - Gasses
  - Water
- EFM/RTU monitoring and control
- Custody transfer precision

Benefits

- Highly scalable
- Cost efficient deployment features and alternatives

- Bi-directional measurement of two integral flow streams
- Capacity to manage up to 20 external flow streams
- Measurement and control of industrial and hydrocarbon gases and liquids
- Computation of standard volume, mass, and energy
- Daily, interval (1 second to 12 hours), and triggered (1-second) logs
- Display and storage of data (configuration, real-time, and historical) for networked Scanner* Series 2000 flow computers
- Gas chromatograph support
- Ethernet and serial communications
- Lithium backup power (no power redundancy system necessary)
- On-board storage for more than 5 years of daily records, 3 years of hourly records†, and 98,000 events

† Based on 14-parameter logs. Log capacity varies with the number of parameters selected and logging frequency.

Web-based configuration and data monitoring

- Configure the device from a web browser (no configuration software or plug-ins to install)
- Monitor data for the Scanner Model 3100 flow computer, and all networked slave devices from a single access point
- No firmware/software compatibility concerns
- Built-in on-screen help

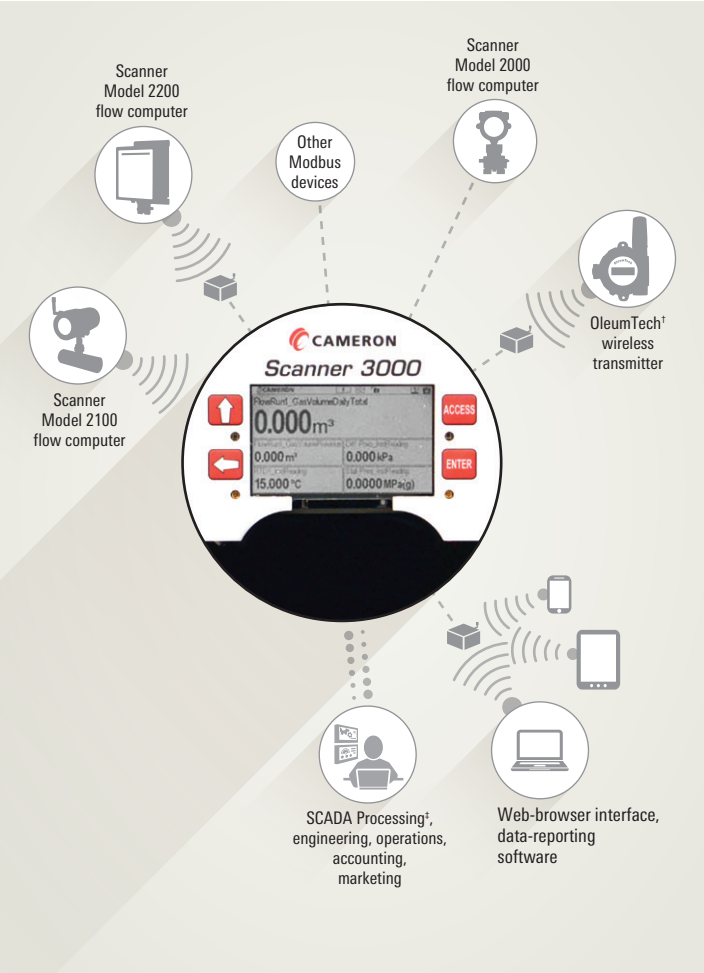
Free supplementary software

Our complimentary software suite provides valuable tools for displaying, sharing, and customizing data to a user's specific needs. Functions include:

- Standard and custom reports
- Data export to common file formats
- Creation of custom Modbus® register maps
- Firmware and configuration file uploads

The Scanner Model 3100 flow computer is four devices in one: flow computer, network manager, process controller, and RTU.

Scanner Model 3100 Flow Computer



† Offered in association with OleumTech Corporation

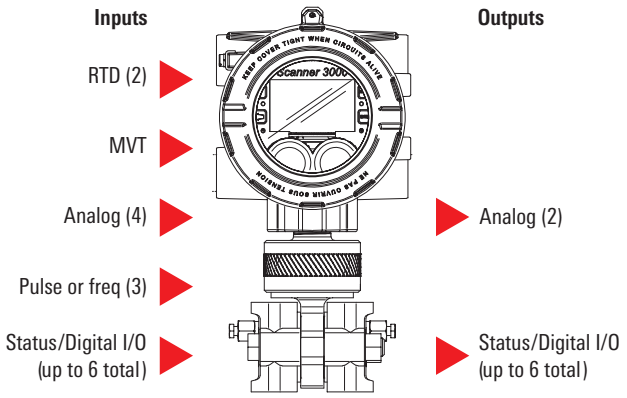
‡ Compatible with eFCAS (a Cameron SCADA solution offered in association with CPU, LLC) and other SCADA products

Flow computer/RTU/controller

The Scanner Model 3100 flow computer supports two integral flow runs, 17 inputs/outputs, and Ethernet and serial communications. To reduce field installation costs, use the Scanner flow computer pre-mounted on a Cameron orifice, cone, or turbine meter with an integral multivariable sensor. Alternatively, the Scanner flow computer can be field-coupled to these meters or other compatible metering equipment.

Reduce operation uncertainty by using the Scanner flow computer's innovative high-resolution log to capture process values following an unplanned process event.

Two independent PID controllers supported by the analog output circuitry provide automated control of a valve or other control device. A primary variable can be controlled with or without a pressure override, allowing users to manage two variables with one output. The primary variable can be flow, temperature, level, or any other variable that is measurable using the flow computer.



Communication ports:

RS-485 Serial (Qty: 2)
RS-485/RS-232 Serial (Qty: 1)
Ethernet (TCP)

Network manager

When multiple points of measurement are required, the Scanner Model 3100 flow computer's distributed flow computing platform and optional wireless communications create a scalable automation solution capable of supporting up to 22 flow streams.

- Automatically integrates up to 20 wired and/or wireless Scanner flow computers
- Inherent protection from data loss (data is stored at the point of measurement before being copied to the Scanner Model 3100 flow computer)
- Communicates wirelessly with Scanner Model 2100 flow computer EFM via SmartMesh† radio
- Data management and protocol customization software simplifies SCADA integration with an established host
- Supports Ethernet communications to a host computer
- Communicates with radios, modems, chromatographs, and other peripheral devices via high-speed serial communications

For more information about networking capabilities, see the Scanner Flow Computer Solutions brochure.

Modbus integration

The Scanner Model 3100 flow computer communicates via Modbus slave and master protocols. When acting as a slave device, the Scanner flow computer responds to queries via Enron Modbus, Modbus TCP, and Modbus RTU. Using master protocol, it can be deployed in a central computing architecture to collect differential pressure, pressure, temperature, and other input variables via cable-saving multidrop RS-485 technology.

The Scanner Model 3100 flow computer can collect up to 384 data points from Modbus devices such as Cameron 800 series pressure transmitters. Its Modbus master functionality provides connectivity to wireless transmitter gateways servicing WirelessHART, ISA100, OleumTech, and other protocols.

Scanner Model 3100 Flow Computer

Approvals	CSA (US and Canada)
	Class I, Div. 1, Groups C and D, T4
	Type 4 weatherproof† protection
	ATEX/IECEx
	Ex d [ia Ga] ib IIC T5 Gb
	Ex tb [ia Da] ib IIIC T100 degC Db
	IP66 protection from dust, water
	ANSI 12.27.01 single seal (MVT ≤ 3,000 psi)
	ASME Pressure Vessel Code (MVT ≤ 3,000 psi); CRN 0F10472.5C
Environmental safety	Relative humidity 0% to 95% non-condensing
	Altitude: Up to 2,000 meters
Enclosure	Cast aluminum (less than 0.05 % copper), painted with epoxy and polyurethane
	Double-ended with single window
	5 conduit ports, ¾-in female national pipe thread taper (FNPT) connections
System power	External user-provided power supply (9 to 30 VDC, 140 mA) with backup power supplied by two replaceable 7.2V lithium battery packs (air transport regulations apply)
Real-time clock	Accurate within 2 min/year over temperature range
	Lithium coin cell battery maintains clock during loss of system power (lithium content: 0.11 g)
Processor	32-bit dual-core ARM Cortex M4
Operating temperature	–40 to 70 degC [–40 to 158 degF]
	LCD contrast is reduced below –30 degC [–22 degF]
LCD display/ keypad	2.7-in diagonal graphic display, 400 × 240 pixels
	0.3-in high characters
	Displays up to 32 user-defined parameters, five at a time, with auto-scrolling
	Battery level indicators
	Wireless radio indicator
	Configurable background (dark or light)
	4-button keypad for advancing display, viewing communication settings
Memory	2.18 MB RAM for processing
	512 kB non-volatile memory for configuration data
	32+1 MB on-board system flash memory
	48 MB on-board archive flash memory
Meter types	Turbine meter Cone meter Orifice meter Ultrasonic meter Positive displacement meter Coriolis meter Venturi meter

† Weatherproof as defined by CEC and NEC codes.

Download types	**Per device**
	Complete (all records including slave device records as applicable)
	Local (integral flow records in a condensed file, ideal for emailing)
	Events
	Triggered (1-second) logs (includes PID tuning)
	Per flow run
	Daily Interval (hourly) Recent (past 7 days of interval logs)
	Slave logs
	Daily
	Interval (hourly)
	Recent (past 7 days of interval logs)
Archive capacity per integral flow run	Up to 59 archivable parameters per flow run; Up to 19 archivable parameters per triggered log
	Daily logs: 2,048
	Interval logs (configurable, 1 second to 12 hours): 24,576 hourly (2.8 years) with 14 parameters; 6,144 hourly (1 year) with 59 parameters
	Triggered logs: 1,351,680 with 1 parameter 135,168 with 19 parameters Configurable to log periodically (1 second to 12 hours), on a real-time period (daily, weekly, etc.), on device alarm, on digital input, or by remote user activation
	Event logs: 98,304 records
	Downloadable via FTP, HTTP (web interface), or Enron Modbus protocol (see Scanner Data Manager for information on viewing data files)
	Logs stored in non-volatile memory for up to 10 years
Slave archive capacity	Daily logs: 768 per slave device Interval logs: 11,264 hourly per slave device
Communications/ archive retrieval	**Wireless**
	Optional SmartMesh radio, external antenna available. See "Hardware options" on page 6.
	Wired RS-485
	Two dedicated ports (1 and 2)
	One shared RS-485/RS-232 port (3)
	Software-selectable 120-termination resistor
	Selectable master or slave protocols
	Wired RS-232
	Shared RS-485/RS-232 port (port 3)
	TXD, RXD, RTS, CTS
	Time-of-day digital output configuration
	Ethernet/TCP
	One RJ-45 connection supports 2 TCP/IP user-configurable ports with selectable slave protocols
	Continuous use requires external power
	Supports 10/100 Mbits/second
	Port pass-through
	Any communication port can be routed to another. Ethernet can be bridged to serial communications for remotely interfacing with connected Modbus devices. (For example, Scanner flow computer slave devices can be configured via ModWorX Pro software without changing wiring connections.)
Flow rate calculations	**Gases:** AGA-3 (1992 and 2012), ISO 5167-2 (2003), ASME MFC-14M (2003), AGA-7
	Liquids: API MPMS 5.3, AGA-3, ISO 5167, AGA-7
Fluid property calculations	**Gases:** AGA-8, AGA-3, AGA-5, GPA 2145-09, GERG-08, SGERG-88
	Liquids: API MPMS 11.1 (2004)

Scanner Model 3100 Flow Computer

Liquid compensation and correction factors	Temperature and pressure compensation
	Meter factor compensation
	Shrinkage factor compensation
	Live BS&W correction
	Live density correction
	Dynamic oil fraction (watercut) is derived from flowing density or watercut analyzer; automatic base density updates from flowing density measurement
Flow streams	Two integral compensated flow runs
	Up to 20 remote flow runs via local area Scanner flow computer network
	Three additional integral flow runs for uncompensated measurement via pulse/frequency inputs
	Up to eight gas streams using gas chromatograph inputs or user-entered compositions
	16-point calibrations for all inputs (linear factor, multipoint, and multi-point meter factor calibrations supported)
	Bi-directional flow measurement
	Stacked inputs for rangeability
Analog inputs	4 channels
	1-5 V, 0-5 V, 4-20 mA, or 0-20 mA
	Accuracy ±0.030% of span max. error at 25 degC [77 degF]
	Temperature effect ±0.25% of span over operating range
	Impedance > 60 Kohm for 1-5V input; approximately 250 ohm for 4-20 mA input
	Over-voltage protection ±30 VDC
	A/D resolution 22 bits
	Linearity error ±0.020% max.; ±0.010% typical
	Single-ended inputs
	Sample rate: 0.1 seconds to 12 hours
	Four previous calibrations available for restore
	Configurable shut-off for saving power when transducer warm-up period is not required
	Integral battery backup
RTD inputs	2 channels
	100-ohm platinum RTD with 2-wire, 3-wire, or 4-wire interface
	Range: –40 to 427 degC [–40 to 800 degF]
	Accuracy: 0.2 degC [36 degF] over sensing range at calibrated temperature
	Temperature effect ±0.3 degC [0.54 degF] over operating range
	A/D resolution 24 bits
	Sample rate: 0.1 seconds to 12 hours
	Configurable shut-off for saving power when transducer warm-up period is not required
Pulse/frequency (TFM) inputs	3 channels
	Maximum voltage: 30 VDC
	Maximum frequency: 10,000 Hz
	Gated transmitter power for each input channel
	Transmitter voltage supply: 10 VDC at 20 mA, protected to 50 mA
	TFM channel 3 has no sleep mode and increased power consumption
	Measures uncorrected gas or liquid volume from a turbine, PD, Coriolis, or ultrasonic meter; measures mass from a Coriolis meter
	Accepts contact closure, open collector, or DC pulse (3-30 VDC) outputs, and turbine magnetic pickup outputs
	Configurable turbine sensitivity (20, 50, 100 mV, peak-to-peak)

Analog outputs	2 channels
	Type 4 to 20 mA, optically isolated, externally powered
	Accuracy (after calibration) ±0.1% of span max. error at 25 degC [77 degF]
	50 ppm/degC [27.8 ppm/degF] temperature drift
	Output load R (ohms) = {supply (volts) – 5.5} / 0.02
	Maximum voltage: 30 VDC
	D/A resolution: 16 bits
	Calibration (zero and full-scale) via software
	Programmable output alarm value for use during loss of power or communication to CPU
	Regulates control valve in PID control applications
Digital I/O	6 channels, user configurable as input or output
	DIO1, DIO2, DIO3, and DIO4 are optically isolated with a max. output of 60 mA at 30 VDC
	DIO5 and DIO6 are non-isolated with a max. output of 500 mA at 30 VDC
	Input types
	Control switch
	Pulse
	Open collector
	Contact closure
	Special functions
	Advance display
	Turn transmitter on/off
	Reset flow run totals
	Reset pulse input totals
	Unlatch DIOs
	Reset trigger archive
	Output modes
	Pulse (based on pulse count or time period)
	Alarm (based on the status of any or all selected alarms—up to 32 user-configured alarms are selectable)
	Conditional (value above or below setpoint, out of setpoint range)
	Programmed (time of day or output state—normally open/normally closed)
	Pulse output
	Maximum frequency: 50 Hz
	Configurable pulse duration (10 ms to 1 day)
	Configurable pulse representation (1 pulse = 1 MCF) based on time or volume
	Based on any accumulator (flow run or turbine meter run)
	Alarm output
	Low/high
	Out-of-range
	Status/diagnostic
User interface	Web browser based (access via laptop, tablet, smart phone)
	Complete configuration, calibration, and maintenance of flow runs, I/O, and gas streams
	Real-time data polling and data downloads
	Recent interval and daily logs (up to 7 days) viewable in interface (other historical logs viewable in Scanner Data Manager)
	Three user security levels, up to 20 operators
	Configuration of Modbus slave/master communications

Scanner Model 3100 Flow Computer

MVT specifications

- Linearized measurements for static pressure and differential pressure
- Measures pressure in absolute and displays in gauge
- Standard MVT has bottom ports, ideal for gas measurement
- Can be inverted for liquid measurement (LCD auto-corrects for easy viewing)†
- Process temperature: –40 to 250 degF [–40 to 121 degC]
- User-adjustable sample time and damping
- Complies with pre-qualified materials of NACE MR0175/ISO 15156‡

† Side port MVT for liquid measurement is available by special order.
‡ This certification does not imply or warrant the application of the MVT in compliance with NACE MR0175/ISO 15156 service conditions in which the MVT is installed.

MVT Accuracy	
Differential pressure	± 0.05% of range for all except 30-in H_2O
	± 0.1% of range for 30-in H_2O
Static pressure	± 0.05% of range
Temperature effect	± 0.25% of full scale over operating range
Stability (long-term drift)	Less than ± 0.05% of URL per year over a five-year period
Resolution	24 bits

Effect on Differential Pressure for a 100-psi Pressure Change		
Differential pressure range†, in H_2O	**Zero shift, % URL**	**Span shift, % reading**
± 30	.05	.01
± 200‡	.01	.01
± 400	.04	.01
± 840	.04	.01

† ± indicates bi-directional capabilities. Example: A range of 30 in H_2O is –30 to +30 H_2O.
‡ 200 psi × 300 psi has a zero shift of .007% and a span shift of 0.01%.

MVT Pressure Ranges†		
Static pressure/ SWP, absolute psi	**Differential pressure, in H_2O**	**Maximum overrange pressure, absolute psi**
100	± 30	150
300	± 200 or 840	450
500	± 30 or 200	750
1,500	± 200, 400, or 840	2,250
3,000	± 200, 400, or 840	4,500
5,300	± 200, 400, or 840	7,420

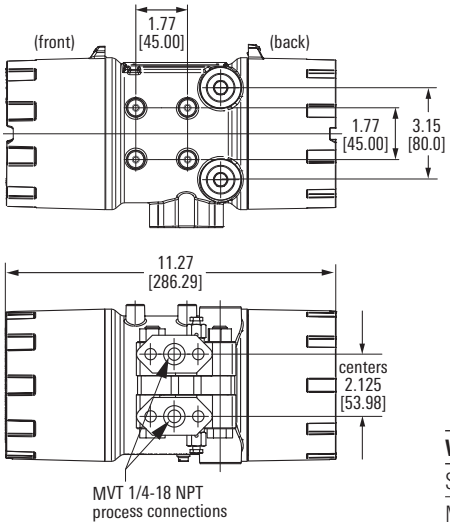
Materials of Construction	
Body bolts and nuts	B7/2H alloy steel, standard (see table below for alternate materials)
Process cover	316 SS†
Process cover gasket	Glass-filled PTFE
Diaphragm	316L SS†
Vent/drain	SS bleed (316 SS plug is standard for NACE and coastal applications)

† Other materials available by special order.

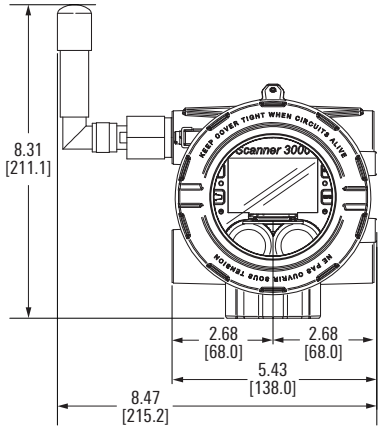
Body Bolts and Nuts (non-process wetted)					
	B7/2H alloy steel	**B7M/2HM alloy steel**	**316SS**	**17-4 PH SS**	**Inconel® 718**
NACE use	No	Yes	No	No	Yes
Coastal use	Possible†	Possible†	Yes	No‡	Yes
Max. pressure	5,300	1,500	1,500	3,000	5,300
Coating	Plated	Black oxide	None	None	None

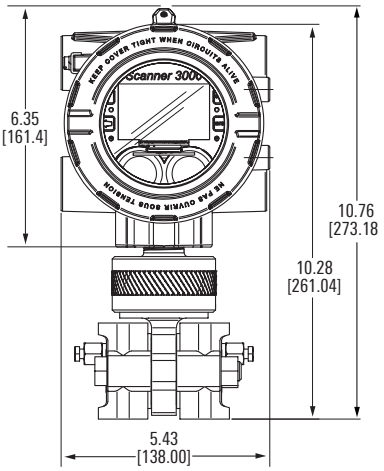
† B7 and B7M alloy steel is susceptible to corrosion.
‡ Chloride stress cracking risk.

Dimensions and weight



Dimensions, in [mm]



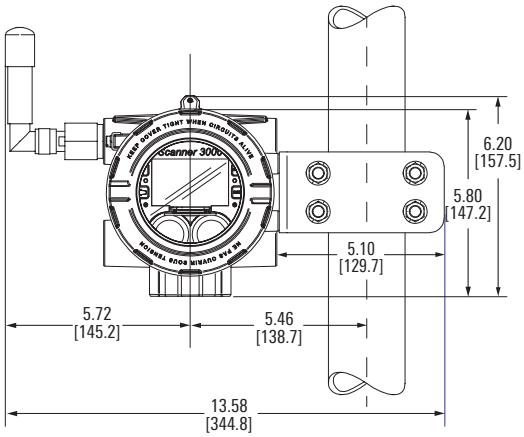


Weight, lbm [kg]	
Scanner Model 3100 base unit (no MVT, no batteries)	9.1 [4.1]
MVT	8.3 [3.8]
Batteries (2 stick-style battery packs)	1.1 [0.5]
Total weight (wired version)†	18.4 [8.3]
Direct-mount antenna and coupler (wireless)	0.6 [0.3]
Total weight (wireless version)†	19.0 [8.6]

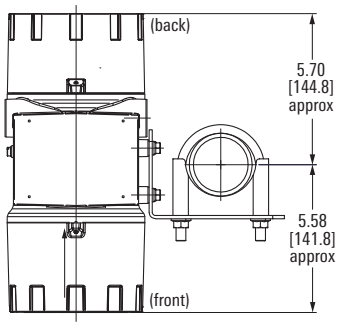
† Includes MVT and batteries

Scanner Model 3100 Flow Computer

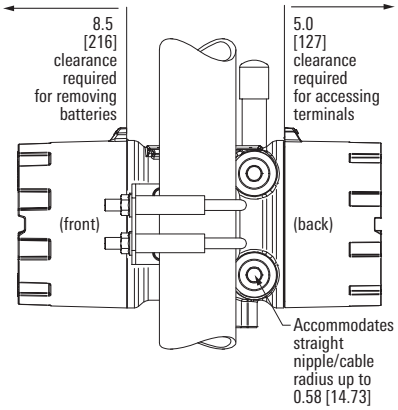
Dimensions with pole mount



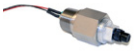
CSA Requirement: When using standard cable, a conduit seal must be installed within 6 in [152.4 mm] of the Scanner flow computer.



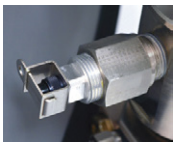
Dimensions, in [mm]



Hardware options

Wireless smartmesh radio	2.4 GHz, self-healing and self-sustaining network	
	Factory installed	
	Transmits up to 985 ft [300 m] node to node	
	Supports communications with up to 20 remote Scanner Model 2100 flow computers (each node can transmit and receive data)	
	Certifications:	
	North America	FCC, IC
	Argentina	CNC
	Australia/New Zealand	ACMA, R-NZ (Z571 Limited), C-Tick
	Bahrain	TRA
	Egypt	NRTA
	Europe	CE Mark, R&TTE
	India	WPC
	Indonesia	SDPPI
	Kuwait	MOC
	Malaysia	SIRIM
	Mexico	IFETEL
	Oman	TRA
	Qatar	TRA
	Saudi Arabia	CITC
	Thailand	SDoC
	UAE	TRA
	Venezuela	TA
External antenna	Direct-mount antenna, omnidirectional, elbow connection, 3.75-in tall	
	Remote-mount antenna, omnidirectional, straight connection, 3.85-in tall (cable sold separately by Cameron)	
	N male brass nickel-plated connector for use with N female explosion-proof†/I.S. coupler, as shown	
	10-ft, 20-ft, and 30-ft cable lengths with connectors for remote-mount antennas, Type 400, –40 to 70 degC [–40 to 158 degF]	
Control switch	Explosion-proof† switch, fits ¾-in female pipe thread, momentary contact, or toggle action	
	Momentary contact switch provides a keypad alternative for pacing the display or activating a triggered log	

†Explosion-proof as defined by CEC, NEC, IEC, and ATEX codes.

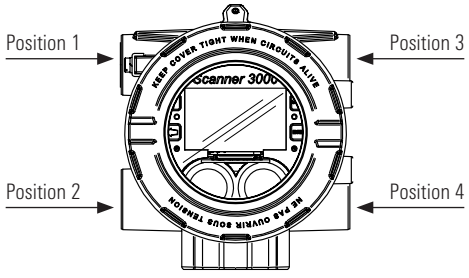
	Toggle switch is available with or without lockout mechanism (shown) to prevent unauthorized changes to switch position.
Pole mount kit	Stainless steel mounting kit for 2-in pole, mounts to side of the electrical enclosure.
RTD temperature sensor	Consult factory for various alternatives and configurations.
Thermowell	Nominal 0.26-in [6.6-mm] bore, ½-in FNPT instrument connection. Consult factory for various materials, process connections, insertion lengths, and options.
5-valve manifold	Consult factory for direct-mount or remote-mount manifold and materials.
Portable ethernet router	Supports the connection of a PC or other browser-equipped device to a Scanner Model 3100 flow computer. The router connects to the Scanner flow computer with an RJ-45 cable, and connects to a PC via Wi-Fi. The router is available in USB-powered or battery-powered models. See page 8 for additional wi-fi solutions.
Customer tag	Stainless steel tag for customer-specified information, 3 in × 1 in, wired on, five lines of text, maximum of 45 characters per line
Software CD	The Scanner Software CD (Part No. 50263697) contains all software and software manuals for Scanner Series 3100 and Scanner Series 2000 flow computers (Scanner Data Manager, ScanMap, ScanFlash, and ModWorX Pro). This software is also available for download from the Cameron website. See Scanner Software, page 8, for software descriptions.

Scanner Model 3100 Flow Computer

Cameron Scanner Model 3100 flow computer code

For customer convenience in communicating product requirements to Cameron, the table below contains model codes for commonly requested features and options. Unique part numbers are generated for each feature combination. In some cases, the availability of a feature is contingent on other selections.

Code	Description					
3100	Scanner Model 3100 flow computer					
	Enclosure:					
X	Explosion-proof and weatherproof					
	Certification:					
X5	CSA for US (national electrical code) and Canada (Canadian electrical code) class I, Div. 1, groups C and D, enclosure 4					
XE	ATEX, IECEx II 2 GD Ex d [ia Ga] IIC T5 Gb or Ex tb [ia Da] IIIC T100 degC Db IP66 (Flame proof) Note: The enclosure is individually rated for IP 68 and Type 4X protection.					
	Direct mount multi-variable transducer (MVT):					
00	None (brass conduit plug installed)					
X1	MVT with CRN—enclosure type 4					
HP	MVT, high pressure, no CRN					
	MVT Materials/trim package: (omit code when MVT is not required)		**Pressure rating**	**Diaphragms**	**¼-in national pipe thread taper (NPT) side ports**	**Bolts/nuts**
A	Standard		ALL	316 SS	SS vent plug	Plated steel
C	SS bolting		≤ 3,000	316 SS	SS vent plug	316 SS
D	NACE (B7M not for offshore)		≤ 1,500	316 SS	316 SS pipe plug	B7M/2HM
E	NACE (Inconel bolting)		ALL	316 SS	316 SS pipe plug	Inconel 718
	MVT certificates and reports: (omit code when MVT documentation is not required)					
M	Mill Test reports for MVT (mill certs significantly increase the price and delivery lead time)					
N	NACE certificate					
F	Full—NACE certificate with mill test reports for MVT					
	MVT process connections: (omit code when MVT is not required)					
LP	One set on bottom, for gas service, vertical piping					
SI	Two sets on each end, for liquid or steam service, horizontal piping (special order)					
	MVT ranges: (omit code when MVT is not required)					
0103	100 psi, 30 in H_20					
0503	500 psi, 30 in H_20	Special order				
0320	300 psi, 200 in H_20					
0384	300 psi, 840 in H_20					
0520	500 psi, 200 in H_20					
1520	1,500 psi, 200 in H_20					
1540	1,500 psi, 400 in H_20					
1584	1,500 psi, 840 in H_20					
3020	3,000 psi, 200 in H_20					
3040	3,000 psi, 400 in H_20	3,000 psi range with 316 SS bolts has a CRN safe working pressure limit of 2,725 psi.				
3084	3,000 psi, 840 in H_20					
5320	5,300 psi, 200 in H_20					
5330	5,300 psi, 200 in H_20	5,300-psi range requires MVT code (HP) and has a CRN safe working pressure limit of 3,625 psi. Single seal is limited to 3,000 psi.				
5340	5,300 psi, 400 in H_20					
5384	5,300 psi, 840 in H_20					
XX1K	> 300 psi,1,000 in H_20	Special order				
	Batteries:					
X	None					
8	Lithium—7.2 VDC battery pack containing twin D batteries. Restricts transportation methods. Battery pack may be shipped separately two battery packs per device.					
	Firmware:					
00S	Standard					
	Explosion-proof switches (factory-mounted):					
XX	None					
RX	Momentary switch only (see diagram at right)					
0X	Toggle switch only (see diagram at right)					
R0	Momentary and toggle switch					
	Switch lockout option (available with switch options RX, 0X, R0 only):					
0	No lockout					
1	With lockout					
	Smart mesh wireless communications: (internal radio, explosion-proof-to-IS adapter for antenna)					
00	None					
A0	Radio with no antenna (antenna supplied separately by Cameron or other manufacturer)					
A1	Radio with right-angle antenna (see diagram at right)					
	Explosion-proof conduit plugs: (unused conduit openings must have a plug)					
B	Brass plugs					
S	Stainless steel plugs					



Mounting Location of Factory-Installed Options	
Unallocated (plugged)	Position 1
Toggle switch	Position 2
Antenna	Position 3
Momentary switch	Position 4

Scanner Model 3100 Flow Computer

Wi-Fi connections

A wireless router connected to the Ethernet port of the Scanner Model 3100 flow computer allows users to connect wirelessly to the Scanner flow computer using a PC or other web-enabled device. If an existing wi-fi network is not available to support this connection, users can create a wi-fi access point using one of the following solutions:

- A portable battery-powered router
- A permanent Class I, Div. 2 qualified router assembly with an optional solar power subsystem and optional cellular connectivity

Scanner software

The Scanner Model 3100 flow computer web interface eliminates the need for PC-based configuration software. However, the Cameron suite of PC software programs equips Scanner Model 3100 flow computer users with additional tools for presenting and sharing data, and maintaining their measurement system. PC-based software is available for download from the Cameron website free of charge, or can be purchased as a CD.

Scanner data manager	Data analysis, reporting, and export/conversion tool
	Tabular and trend presentations
	Customized reports
ScanMap	Tool for creating custom Scanner Model 3100 flow computer Modbus register maps, including user-specified units, rates, and register names for SCADA integration
	Firmware-specific templates
	Auto-generated protocol manual (for print or upload to web interface)
ScanFlash	Firmware, configuration, and custom protocol map upload utility
ModWorX Pro	Configuration of Scanner Series 2000 flow computers

Commissioning, training, and support services

As a leading provider of flow equipment to worldwide oil, gas, and process industries, Cameron offers a full range of services and expert support to help customers improve productivity, enhance system performance, and increase profitability.

Our skilled field service personnel are trained to maintain, replace, refurbish, and support measurement equipment. Our services include but are not limited to:

- Measurement consulting
- Start-up assistance and commissioning
- Measurement audits
- Field services, shop repair, and calibration
- System health checks and maintenance
- Product training and measurement seminars

For a service quote, contact your regional Cameron representative.

cameron.slb.com/flowcomputers

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