PSC-200

Intelligent Data Controller

Key features and benefits

- **Interfaces with a variety of conventional low-band, VHF, UHF, 800 MHz or 900 MHz radios**
- **Rugged design with no operator actions required**
- **Operating cycle minimizes drain on vehicle battery**

The PSC-200™ Intelligent Data Controller performs basic radio modem functions plus a variety of data management functions for the Trimble GPS/AVL Subsystem. System integrators will find it simple to integrate with the communication system and easy to use as either a base station unit or vehicle unit in a wide variety of applications. End users will also benefit from the ease of use and the many other features the unit offers.

The PSC-200 controller is available as a stand-alone intelligent controller or with a built-in 8-channel GPS receiver. It is designed to support AVL and messaging functions, with RS-232 serial data interfaces compatible with Trimble's Echo*VST*™ status/message terminal and any of the Trimble Placer™ family of GPS receivers, including the Placer 455DR dead reckoning unit. In addition, the PSC-200 controller manages discrete signal lines for status reporting such as odometer readings, ignition or battery switches, lights, sirens, or other vehicle operational parameters.

High-performance AVL communications

GPS designed for AVL

The integral GPS receiver is an 8-channel design that utilizes Trimble's latest receiver technology, including position algorithms optimized for vehicle applications. This receiver is differential-ready and uses the Trimble ASCII Interface Protocol (TAIP).

For capability that extends well beyond that of traditional radio modems, the PSC-200 controller utilizes an on-board microprocessor and application firmware that supports time-delayed radio turn-off and vehicle parameter monitoring. When used with a Trimble Echo*VST* status terminal, vehicle location reports include time-tagged status information.

Fast, efficient polling

The PSC-200 controller utilizes specialized protocols for reliable data transmission in a mobile radio environment, providing AVL fleet updates at up to 5 vehicles per second. The unit is compatible with several common conventional radio types.

Housed in a low-profile metal package with integral mounting points, the PSC-200 data controller is easy to install. The same size package is used for versions with or without the integral GPS receiver. Trimble provides compatible power, interface and radio cables designed for configurability and integration within the GPS/AVL Subsystem. Four status lights on the front panel give a visual indication of system and unit operational status.

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GENERAL DESCRIPTION

Function	Data controller with built-in modem for both base and mobile applications
AVL report rate	Up to 5 per second, depending on use of DGPS, messaging, radio model and fleet size
Protocol	Bit map polling protocol
GPS	Available with internal GPS or with interface for external GPS

GENERAL SPECIFICATIONS

Data Controller

Modem speed	1200 baud
Equipment interface	Two RS-232 ports (9600 baud); Ignition sense input and three discrete input lines; Odometer pulse input line and transducer power output; Power outputs (pass through) for Echo*VST* status/message terminal, odometer transducer, radio (switched power), and Placer GPS sensors; Discrete output lines (application specific: consult factory)
Compatible data equipment	Placer GPS sensor family; Echo*VST* status/message head
Compatible radio equipment	Various conventional two-way radios (consult factory)

Internal GPS Receiver

Interface	Utilizes one of the two RS-232 ports
Receiver	L1 frequency, C/A code (SPS), 8-channel, continuous tracking
Output data	Latitude, longitude, speed, time, direction of travel, and other data calculated at rate of once per second
GPS aquisition time	2 to 5 minutes (cold start) <30 seconds (typical, with external battery backup); 2 seconds (typical reacquisition)
Accuracy*	
Position	2–5 m (2 sigma) steady-state conditions (with differential); 25 m (SEP), steady state conditions (without differential)
Velocity	0.1 m/s (1 sigma), steady state conditions
Time	Universal Coordinated Time (UTC) to the nearest second
Differential	GPS receiver is differential ready
Reporting format	Trimble ASCII Interface Protocol (TAIP)*

ENVIRONMENTAL SPECIFICATION

Operating temp	–20°C to +70°C	
Non-operating temp	–40°C to +85°C	
Vibration	0.008 g2/Hz	5 Hz to 20 Hz
	0.05 g2/Hz	20 Hz to 100 Hz
	–3 dB/Octave	100 Hz to 900 Hz
Humidity	95% non-condensing	

PHYSICAL CHARACTERISTICS

Size	8.9" W 5 5.4" D 5 1.7" H 22.6cm W x 13.7cm D x 4.3 m H
Weight	2.5 lbs. (1.13 kg)
Input voltage	+8 to +32 VDC (CAUTION: Radio and odometer may not be capable of withstanding the maximum voltage)
Power	1.5 W typical at 12 VDC, plus pass-through power (total may not exceed 15 W); Internal GPS adds 1.2 W (typical)

ORDERING INFORMATION

Data Controller

PSC-200	**Part Number 23803-00**
PSC-200 with internal GPS	**Part Number 23802-10**
Manual	**Part Number 24841-00**

Accessories

Bulkhead Antenna	**Part Number 28367-70**
Antenna Cable, straight	**Part Number 30893**
Antenna Cable, right angle	**Part Number 31193**
Service Computer Interface Cable	**Part Number 25139-00**
Bulkhead Antenna w/ Flange	**Part Number 31192-00**

Base Unit Accessories

Power Supply	**Part Number 24452-00**
Radio Interface and I/O Cable	**Part Number 24679**

Mobile Unit Accessories

Power Cable (GPS only)	**Part Number 24825**
Vehicle Interface Cable	**Part Number 24425**
Radio Interface Cable	**Part Number 24424**
Placer 450/455DR Interface Cable	**Part Number 34964**

Note: All GPS receivers are subject to degradation of position and velocity accuracies under Department of Defense imposed SA (Selective Availability). Position will be degraded up to 100 meters 2D RMS. The effect on velocity and time is yet to be determined.

* Trimble ASCII Interface Protocol (TAIP) refers to Trimble-specific digital communications interface, based upon printable ASCII characters. Includes messages for system set-up, scheduled reporting, differential corrections, and polled responses.

Specifications subject to changes without notice.

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