Solar inverters

ABB monitoring and communications
VSN750 Plant Manager

The VSN750 Plant Manager is a high-performance, data collection and communication system for a wide range of commercial, industrial or utility PV plant applications.

The VSN750 Plant Manager contains all the components needed to monitor small or medium commercial PV plants in a single enclosure.

The Plant Manager can also be used as a flexible modular system block to create large and geographically distributed utility-scale monitoring designs that require customization.

A range of networking options include fiber and copper Ethernet for building distributed PV-plant monitoring networks spread over large geographical areas.

The revenue grade metering is eligible for US performance-based incentives as well as other US REC-aggregators.

This Plant Manager includes quality equipment for reliabile monitoring

The included VSN700 Data Logger (-05) provides both customer data management and inverter command and control through either a utility SCADA system or through the Aurora Vision® Platform where it uploads information over the Internet in near real-time.

The built-in Modbus TCP server feature in the VSN700-05 Data Logger both acts as a pass through for Modbus RTU or converts the proprietary inverter communication protocol to SunSpec compliant Modbus maps for easy SCADA system interface, data collection, and inverter command execution.

The 277VAC capable wide input power supply is ideal for commercial installations where only three-phase 480VAC is easily available.

Highlights

- VSN700-05 Data Logger
- RS-485 repeater with galvanic isolation
- 85VAC to 305VAC / 24 VDC, 1.25A power supply
- NEMA 4 / IP65 enclosure
- Revenue grade energy metering options
- Copper, Fiber, Cellular, and RS-485 communications options
- Easy installation

Power and productivity
for a better world™

Additional highlights

- Monitoring support for all ABB inverters and many meters, combiners, and weather stations
- An ideal companion for monitoring and networking a large plant of TRIO inverters
- The turnkey solution saves the installer time (and money) by providing several components, prewired and preinstalled in a outdoor rated enclosure
- Remote management capabilities minimize “truck rolls” or service visits by providing configuration, upgrades, and debug over the Internet using the Aurora Vision® Plant Management Platform

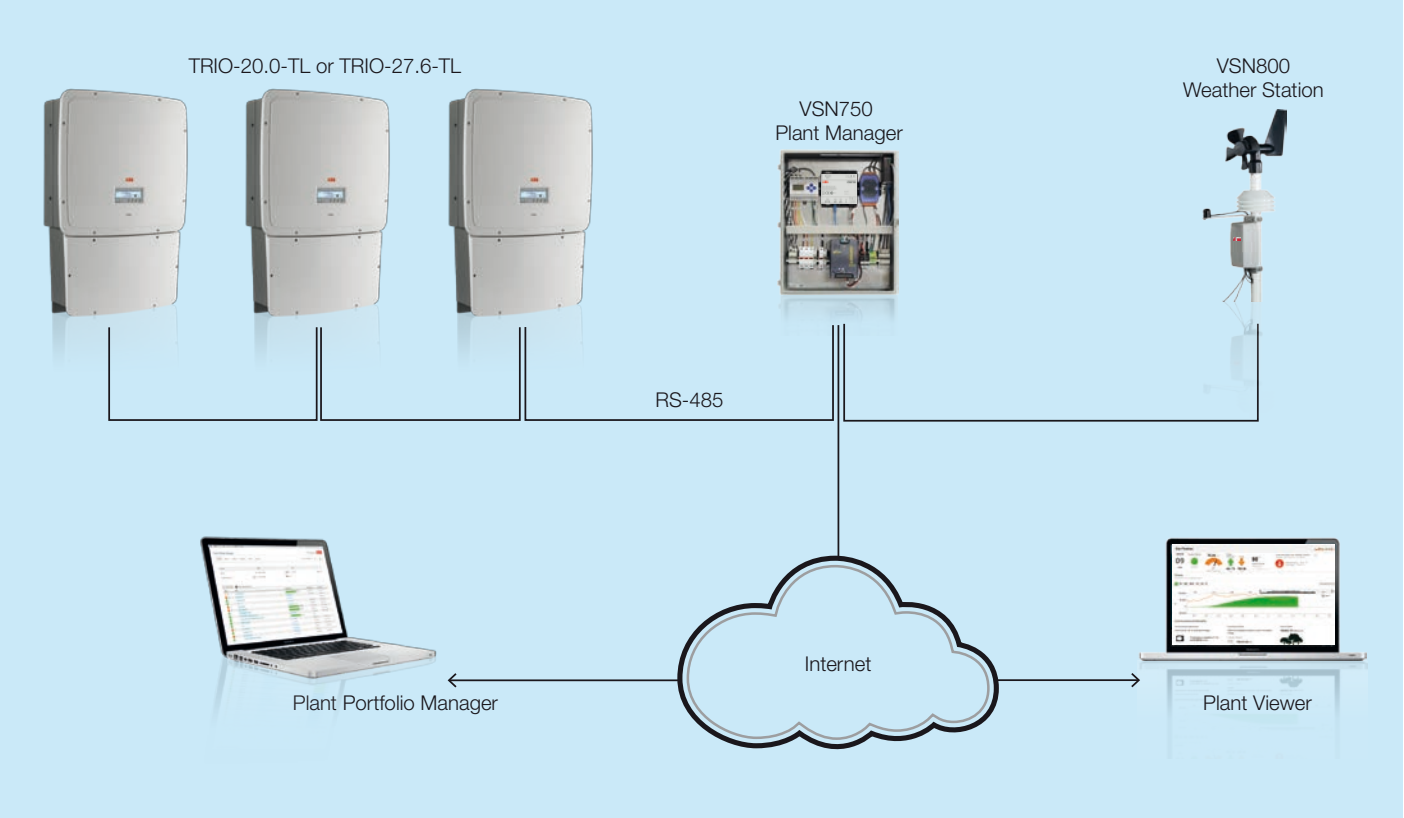
Plant Manager Comparision

	VSN700 model	Revenue Grade Meter	Ethernet Switch	Cell Router	Optical Isolated Repeater	Pwr Supply
VSN750-N00010	VSN700-05				1 port	Yes
VSN750-N00110	VSN700-05			Yes	1 port	Yes
VSN750-N05110	VSN700-05		5 Port	Yes	1 port	Yes
VSN750-N00130	VSN700-05			Yes	3 port	Yes
VSN750-N05030	VSN700-05		5 Port		3 port	Yes
VSN750-N06060	VSN700-05		4 Port Copper, 2 Port Fiber		(2) 3 port	Yes
VSN750-N10010	VSN700-05	Veris E51C2			1 port	Yes
VSN750-N10110	VSN700-05	Veris E51C2		Yes	1 port	Yes
VSN750-N15110	VSN700-05	Veris E51C2	5 Port	Yes	1 port	Yes
VSN750-N10130	VSN700-05	Veris E51C2		Yes	3 port	Yes
VSN750-N15030	VSN700-05	Veris E51C2	5 Port		3 port	Yes
VSN750-N10030	VSN700-05	Veris E51C2			3 port	Yes

Technical data and types

Type code	VSN750 Plant Manager
Platform	
Devices supported	All ABB devices, 3rd party meters & other modbus devices (Consult latest supported list)
Monitoring	Power/Energy generation and demand, Inverter Direct, Environmental Sensors *
Inverter control	Power reduction, reactive power, COS ϕ by Modbus TCP (Available commands are inverter dependent)
Communication interfaces	
Serial port interface	(2) RS-485 + (1) RS-232
RS-485 port 1 configuration	Optically isolated repeater for Modbus or Aurora Protocol support
RS-485 port 2 configuration	Non-isolated Modbus or Aurora Protocol support
Maximum devices per serial port	Physical limitation of 32 (reduced by poll rate and inverter data set size)
Fieldbus cable	RS-485 shielded twisted Pair. Recommend Belden # 1120A cable or # 3106A for 3 conductors
Ethernet port 0	Firewall protected Ethernet WAN port for internet connection
Ethernet port 1	Local LAN with static IP address
Ethernet connections	RJ-45 Ethernet 10/100 base-T (LAN/WAN)
Communication Protocols	
Plant fieldbus protocols	Aurora Protocol, Modbus RTU, SunSpec
LAN/WAN protocols	Modbus/TCP, HTTP, DHCP, SSL, SSH, XML
Data logging specifications	
Data sampling rate	High frequency data sampling (less than 1 minute average)
Logging	Real time power values at 1,3,5, 15 minute configurable intervals
Local storage	Log data for 30 days based on 15-minute intervals. (Days logged may be reduced by intervals shorter than 7-minute)
Upgradeability	Field upgradable over the Internet or locally via USB memory stick
Ethernet switch	
CAT-5 connections	RJ-45 Ethernet 10/100 base-T ports
Fiber connections	10/100 BaseFX ST ports
Managed	Unmanaged
Copper max distance	100 meters
Fiber max Ddstance	2km
Cell router	
Network	HSPA+/EV-DO Gobi (800/850/900/1700 (AWS)/1900/2100MHz)
Internet connection	Firewall protected Ethernet WAN
Antenna connection	50 ohm SMA (f)

Commercial application with VSN750 Plant Manager

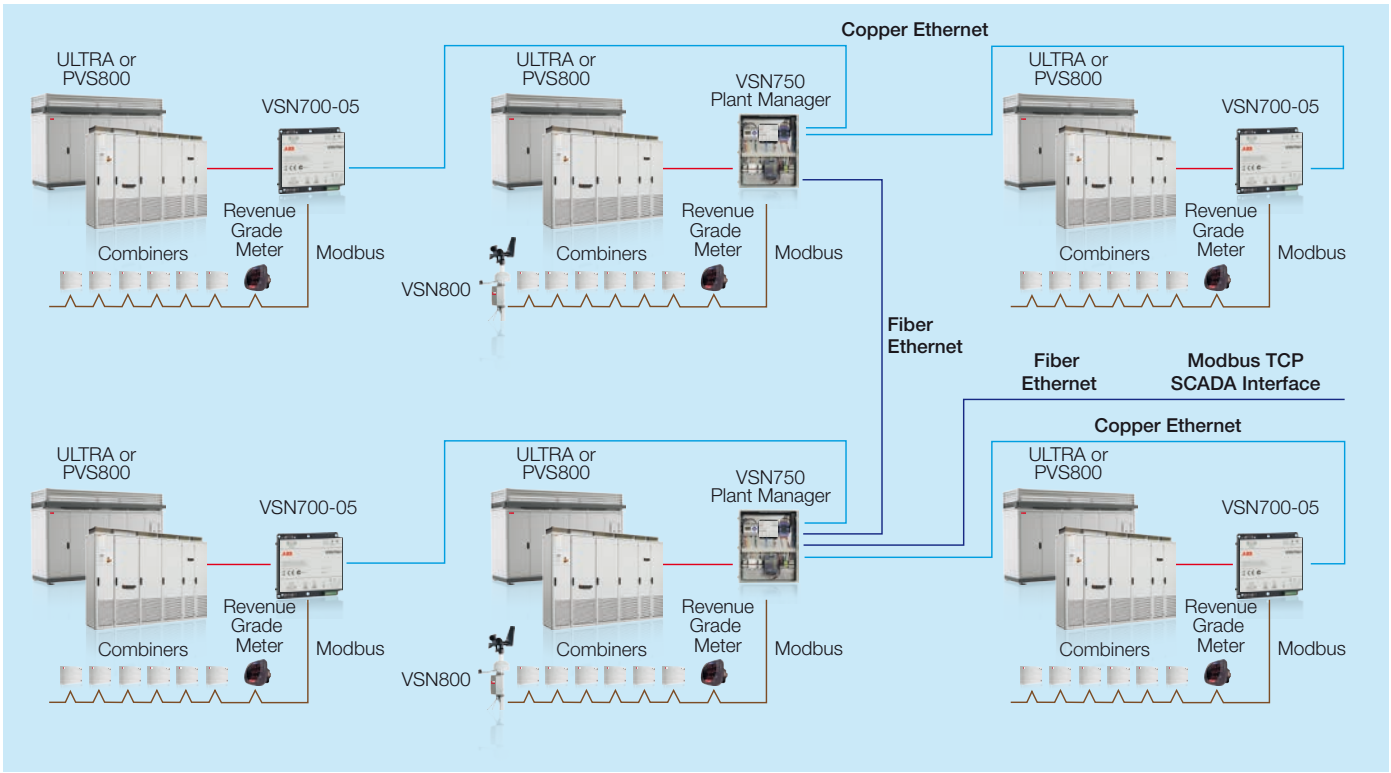


Technical data and types

Type code	VSN750 Plant Manager
Revenue Grade Energy Metering	
Meter input range	0 bis 0.333 Voltage CTs.
Current scaling input	5A to 32,000A
Voltage input	UL:90V_{L-L} to 600V_{L-L};CE90V_{L-N} to 300V_{L-L}
Active power accuracy	IEC 62053-22 (0.5% Accuracy). ANSI C12.20 (0.5% accuracy)
Reactive power accuracy	IEC 62053-23 class 2 (2% accuracy)
Feldbus	Modbus RTU RS-485 (sunspec)
CT integration	Wide Range of CTs must be ordered seperately. See user guide for full specifications.
Power supply	
DC power supply input	from 85 VAC to 304 VAC
DC power supply output	24VDC, 1.25A
Environmental protection rating	
Ambient temperature range	-40°C to 50°C
Environmental protection rating	NEMA 4
Relative humidity	0 to 100% condensing
Mechanical parameters	
Dimensions H x W X D	20” x 16” x 6” (.51m x .41m x .15m)
Enclosure options	painted steel
Weight	40 lbs (18.2 kg)
Mounting system	Screws through flanges
Compliance	
Safety	UL/CSA/EN/IEC 61010-1
Marking	cCSAus / CE
Altitude	Operate below 3000m
Emission	FCC Part 15 Class A, CISPR 22, EN 55022 Conducted and Radiated Emmission
Immunity	EN 61000, EN55024
Telecom	FCC Part 68

*** see ABB’s web site for supported devices**
**** see ABB’s web site for other supported programs**
Remark. Features not specifically listed in the present data sheet are not included in the product

Utility application with VSN750 Plant Manager – 10MW installation example



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VSN750 - Accessories

VSN800-12	Weather Station with sensors: ambient temperature , panel temperture, global irradiance	
VSN800-14	Weather Station with sensors: ambient temperature, panel temperature, global irradiance, plane of array irradiance, wind speed & direction	
VSN-MGR-AUX-CT100	Current transformer 100 A, 0.333VAC output, 1% accuracy, solid core, 1.0” window diameter	
VSN-MGR-AUX-CT200	Current transformer 200 A, 0.333VAC output, 1% accuracy, solid core, 1.0'' window diameter	
VSN-MGR-AUX-CT200SC	Current transformer 200 A, 0.333VAC output, 1% accuracy, split core, 1.25” window diameter	
VSN-MGR-AUX-CT400SC	Current transformer 400 A, 0.333VAC output, 1% accuracy, split core, 2.5” x 2.9” window diameter	
VSN-MGR-AUX-CT600SC	Current transformer 600 A, 0.333VAC output, 1% accuracy, split core, 2.5” x 2.9” window	
VSN-MGR-AUX-CT800SC	Current transformer 800 A, 0.333VAC output, 1% accuracy, split core, 2.5” x 2.9” window	
VSN-MGR-AUX-CT1000SC	Current transformer 1000 A, 0.333VAC output, 1.% accuracy, split core, 2.5” x 5.50” window	
VSN-MGR-AUX-CT1200SC	Current transformer 1200 A, 0.333VAC output, 1% accuracy, split core, 2.5” x 5.5” window	
VSN-MGR-AUX-CT1600SC	Current transformer 1600 A, 0.333VAC output, 1% accuracy, split core,2.5” x 5.5” window	
VSN-MGR-AUX-CT2000SC	Current transformer 2000 A, 0.333VAC output, 1% accuracy, split core, 2.5” x 5.5” window	
VSN-MGR-AUX-CT2400SC	Current transformer 2400 A, 0.333VAC output, 1% accuracy, split core, 2.5” x 5.5” window	

Support and service

ABB supports its customers with dedicated, global service organization in more than 60 countries and strong regional and national technical partner networks providing complete range of life cycle services.

For more information please contact your local ABB representative or visit:

www.abb.com/solarinverters

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