Wayside Communications Systems Products

Communications Modules   **B25 - B27**

WAMS
Wayside Alarm Management System   **B29**

OCG
Office Communications Gateway   **B30**

WCM Series
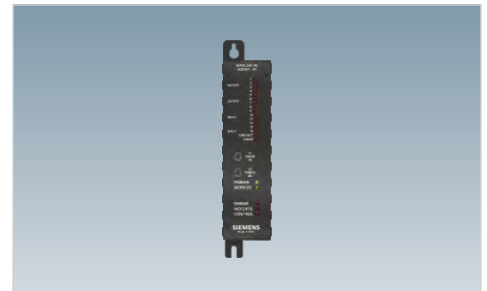Wayside Communications Manager   **B31 - B32**

WCP Series
Wayside Communications Package   **B33 - B40**

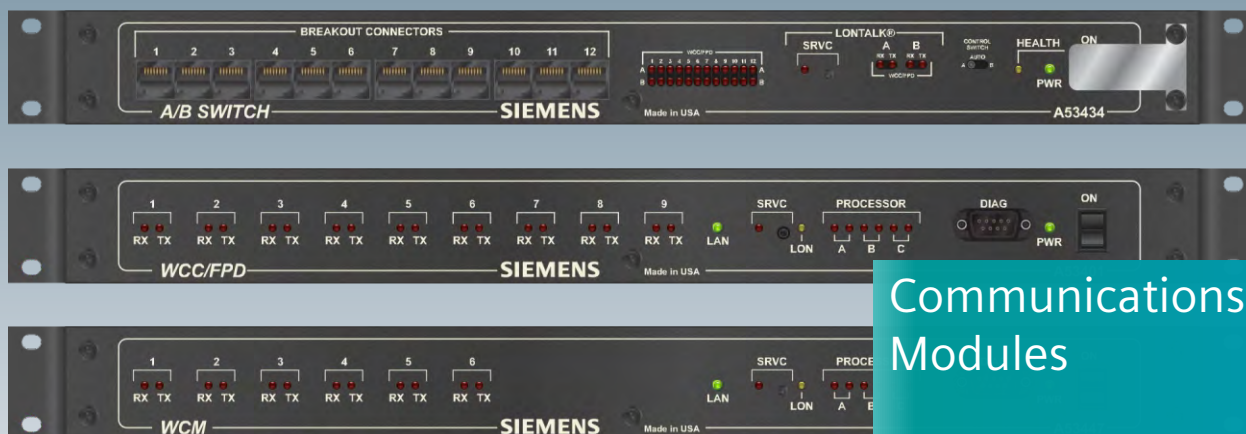**I/O Modules**   **B41 - B42**

Communications
Modules

Overview

Model A53434 AB Switch shown for reference purposes only!
Actual unit selected may vary in mounting and features.

SIEMENS AB Switch, (53434 Series) is a general purpose device used to provide RS-232 redundant switching for office and field applications. It is normally used in conjunction with two of **SIEMENS** 9-port Wayside Communications Controller / Field Protocol Device, WCC/FPD's (53401 Series) to provide redundant communication with code lines.

SIEMENS AB Switch and the two connected **SIEMENS** WCC/FPD units communicate via an Echelon® (LonTalk®) LAN. The AB Switch is constantly checking the health of the the WCC/FPD's and if any problem is detected with the primary unit, the AB Switch automatically switches all lines to the backup unit.

The AB Switch utilizes magnetically-latched relays for line control. In the unlikely event that the AB Switch should fail, the relays will remain latched in the current state and the on-line WCC/FPD unit will continue to operate without interruption. Once the relays are latched in the failed state, a switchover is not possible until the AB Switch is once again operational.

SIEMENS Wayside Communications Controller/Field Protocol Devices, WCC/FPD's (53401 Series) is a general purpose communications controller and protocol converter for use in communications systems. It is configured for use through the local diagnostic port and/or remotely via dial-up or LAN/WAN connections. The unit is fully compatible with **SIEMENS** ASERVER & WCC MAINT. Utilities, and can be diagnosed and monitored remotely. Multiple units can be clustered together to perform front end processing and Cluster Controller functionally.

NYK:9000534340001

AB Switch Module
- Neuron® Echelon® 10 MHZ
- Echelon® LonTalk® port for maintenance
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 4.6 lbs. (2.09 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- (12) RS-232 ports
- Solid state design
- Provides automatic fail detection and switch over operation for primary to backup
  (When used in conjunction with the WCC/FPD)
- Input power 9 VDC - 16 VDC
- (12) inputs
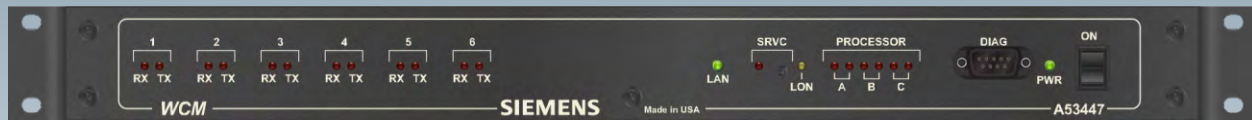- (12) outputs
- NO cable routing bracket

NYK:9000534010101

Packet Switch Module
- Echelon® LonTalk® port for maintenance
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 4.6 lbs. (2.09 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Solid state design
- Input power 30 VDC - 80 VDC
- Supported protocols: ATCS Spec 200, X.25, HDLC-LAPB/LAPD/UI, Genisys/PRCCI, Flexicode, 504/506/514, Datatrain, J&K, E2, MCS1/MCS2/HDP-3 SCS-128 and 2000 A&B
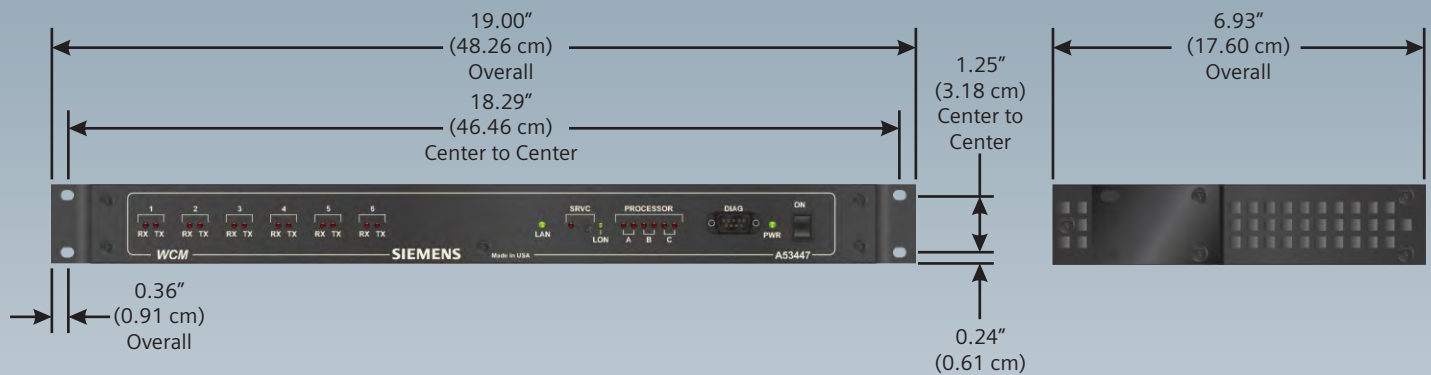
Wayside Systems
Wayside Communications Systems Products

NYK:9000534470001

Wayside Communications Module
- Echelon® LonTalk® port for maintenance
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 4.6 lbs. (2.09 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Solid state design
- Input power 10 VDC - 30 VDC
- Power consumption 10 W
- (8) inputs
- (8) outputs

Applicable for all Communications Modules

WAMS

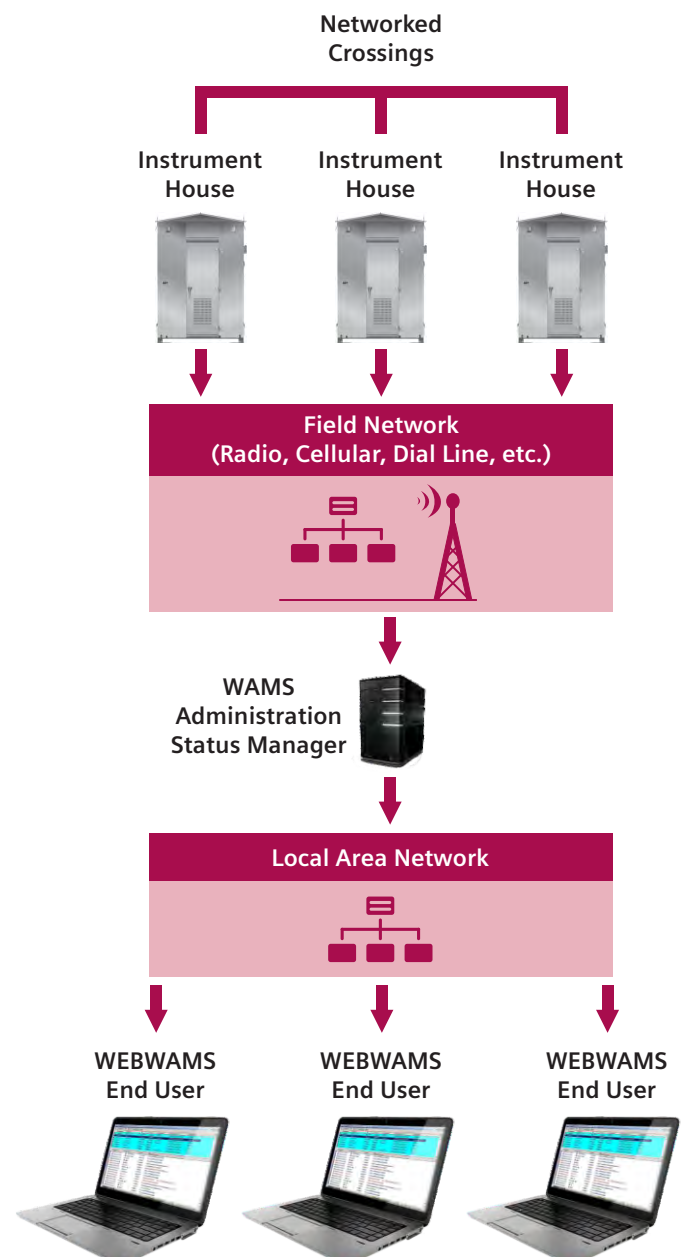**Wayside Alarm Management System**

Overview

SIEMENS Wayside Alarm Management System (WAMS) manages data collected from event recorders supporting railroad operations.

WAMS Status Manager application collects data from the network and notifies users with e-mail, cell phone text messages, and FAX. Users can use WebWAMS to log into WAMS system remotely and check the status of railroad wayside locations.

WAMS supports federally-mandated inspection of railroad wayside equipment by automating many inspection steps and by providing a secure, on-line process for handling inspection reports.

Real time monitoring and complete status documenting at your finger tips. WAMS is an invaluable operations and maintenance tool and a cost effective management resource.

System

Networked Crossings

Instrument House · Instrument House · Instrument House

Field Network
(Radio, Cellular, Dial Line, etc.)

WAMS Administration Status Manager

Local Area Network

WEBWAMS End User · WEBWAMS End User · WEBWAMS End User

OCG

Office Communications Gateway

Overview

SIEMENS Office Communications Gateway (OCG) is a standalone executable program that runs on the Windows® operating system.

It was designed to bring the ATCS over IP and NMS functionality of the Siemens Wayside Cluster Controller (WCC) to the PC platform. OCG adds diversity and scalability to Advanced Train Control System (ATCS) networks, providing an open-ended means to control large systems with no investment in hardware other than the PC Workstation/Server.

OCG provides the interface between the Office Dispatch System and the Field Code Line Network for ATCS networks. OCG is functionally identical to the Siemens Wayside Communications Controller (WCC), with the exception of the serial interface protocols, as OCG is an IP based system.
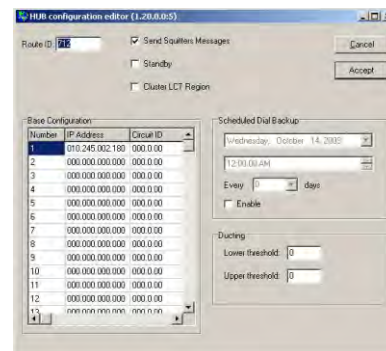
OCG is capable of controlling more Front End Processor (FEP) (HUB/LCT) processes than the WCC. In its current release, OCG supports up to (32) simultaneous FEP processes while the WCC supports up to (3) FEP processes. OCG is backward compatible with WCC clusters, and may be freely integrated into existing systems, intermixing with conventional WCCs as part of a migration strategy.

Appropriately configured individual codelines are quickly and easily transferred from the WCC to OCG (and back) using the **SIEMENS** suite of network management utilities (Aserver/WCCMaint). OCG will run HUB and Line Control Task (LCT) processes in any combination .
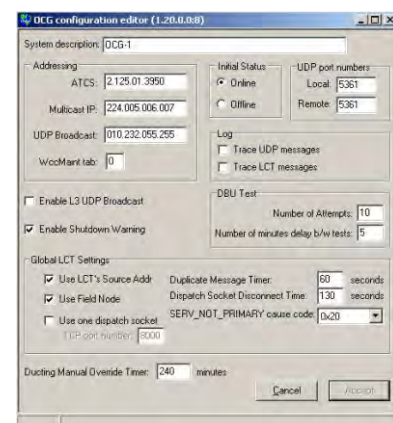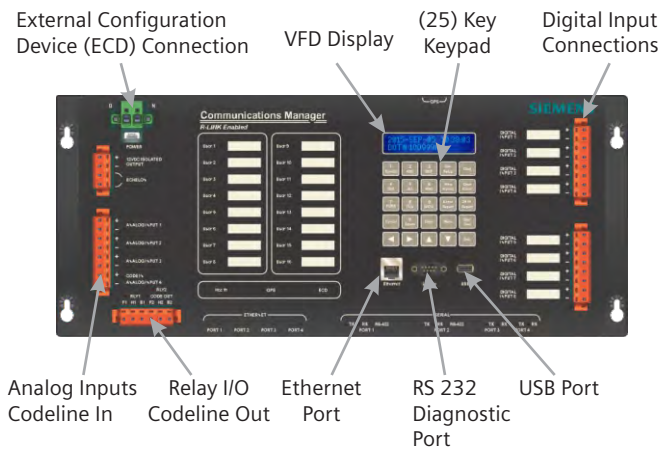
Screenshots
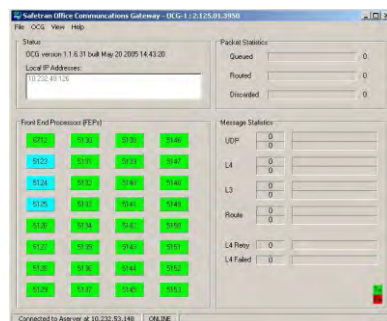
Main Menu

Hub Editor

Configuration Editor

WCM
Series

Wayside Communications Manager

Overview

External Configuration Device (ECD) Connection

VFD Display

(25) Key Keypad

Digital Input Connections

Analog Inputs Codeline In

Relay I/O Codeline Out

Ethernet Port

RS 232 Diagnostic Port

USB Port

Model A53475 WCM Series Wayside Communication Manager shown for reference purposes only!
Actual unit selected may vary in mounting and features.

SIEMENS Wayside Communications Manager (WCM) allows end users to consolidate multiple communication and signaling devices operating on public and private communications networks into a centralized communications system.

Providing simple user interfaces for monitoring and configuration. For control point applications, the WCM provides a minimal signal input capability with built-in logic execution which can be communicated over the user's network.

As a communication protocol converter the WCM supports a wide range of modern and legacy communication protocols and provides inter-message protocol conversion communications. As a message router, the WCM provides configurable and automatic routing capabilities within many different kinds of networks as well as provides network redundancy support.

Features

- Communication protocols suite for both Positive Train Control (PTC) and Advanced Train Control System (ATCS) based radios for interoperability

- Supports multiple ethernet and serial interfaces to interconnect to wayside devices

- Integrates seamlessly with existing Centralized Traffic Control (CTC) systems, Network Management System (NMS) tools and Simple Network Management Protocol (SNMP) based architecture.

- Provides a complete migration path to PTC while leveraging existing assets

- Unmatched connectivity options to data radios

NYK:9000534750001

NYK:9000534770001

Wayside Communications Manager
- Converts Echelon® messages to ethernet messages
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8.3 lbs. (3.76 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 9 VDC to 32 VDC, isolated, reverse polarity
- (4) Ethernet ports
- (1) DB-25 RS-232 / RS-422 Sync / Async ports
- (8) digital inputs

Power Interface Module
- Weight is approx. 1.4 lbs. (0.63 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity

Applicable for A53475 Wayside Communications Manager

WCP
Series
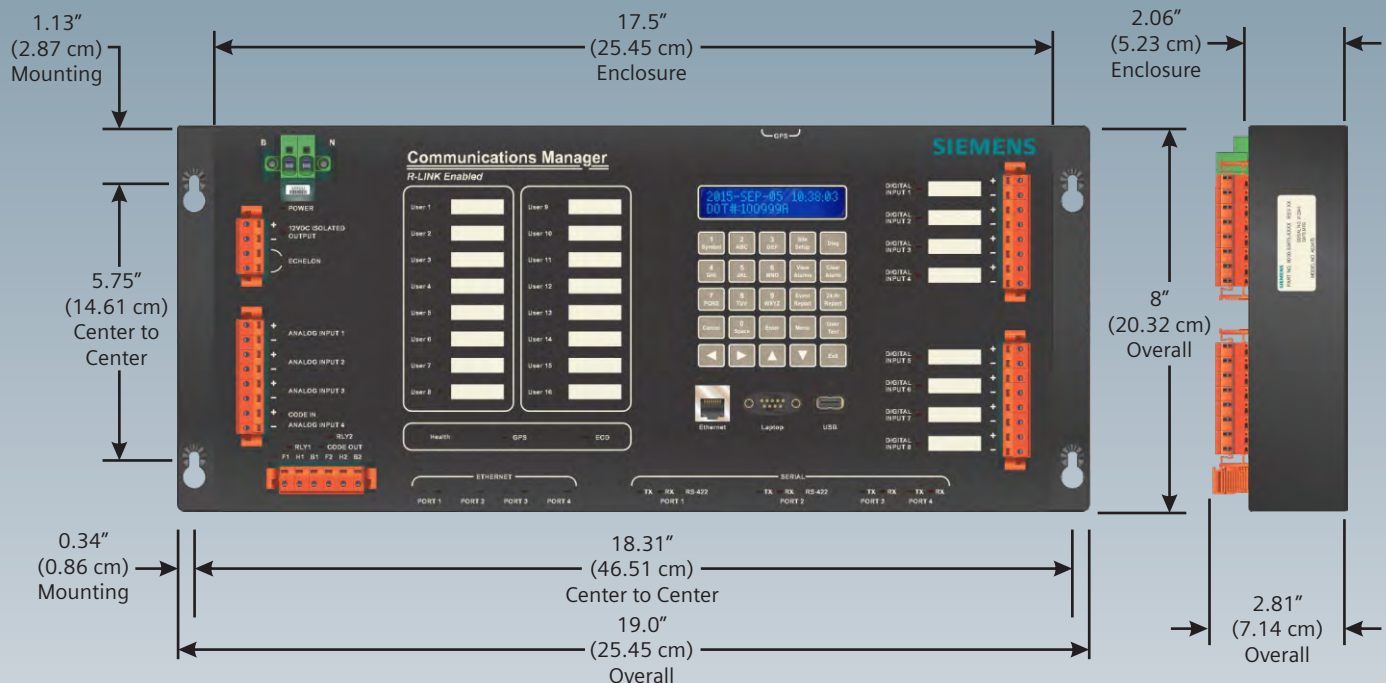
Wayside Communications Package

Overview

WCP Series Wayside Communications shown for reference purposes only!
Actual unit selected may vary in mounting and features.

Features

- Separate CPU II, DC / DC Converter and Radio modules provided to simplify system maintenance issues and provide for more flexible installation options

- RS-232 / RS422 connection option on two client ports

- High-speed (1.2Mb/s) client LAN port allows WCP CPU II to directly connect to other vital and non-vital I/O modules concurrently

- Front-panel push-button configuration no laptop needed during routine maintenance

- Outbound RSSI reading provides additional system information of signal strength at WCP location

- Optional on-board ladder-logic processing for code system applications

- Protocol emulation and conversion of many industry standard code-line protocols

- Full non-volatile event log built in with hardware real-time clock

- Full duplexer operation at 4800 baud using GMSK direct FM signaling with extensive error detection and correction

NYK:9000531050001

NYK:9000531050002

WCP CPU Module
- Converts Echelon® messages to ethernet messages
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 4.6 lbs. (2.09 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Quiescent power consumption is approx. 295 mA @ 13.8 V
- Input voltage 10 VDC to 36 VDC
- (2) RS-232 25 pin connectors
- (1) DB-9 9 pin connector
- (1) 09500 cable

WCP CPU Module
- Converts Echelon® messages to ethernet messages
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 4.6 lbs. (2.09 kgs.)
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Quiescent power consumption is approx. 295 mA @ 13.8 V
- Input voltage 10 VDC to 36 VDC
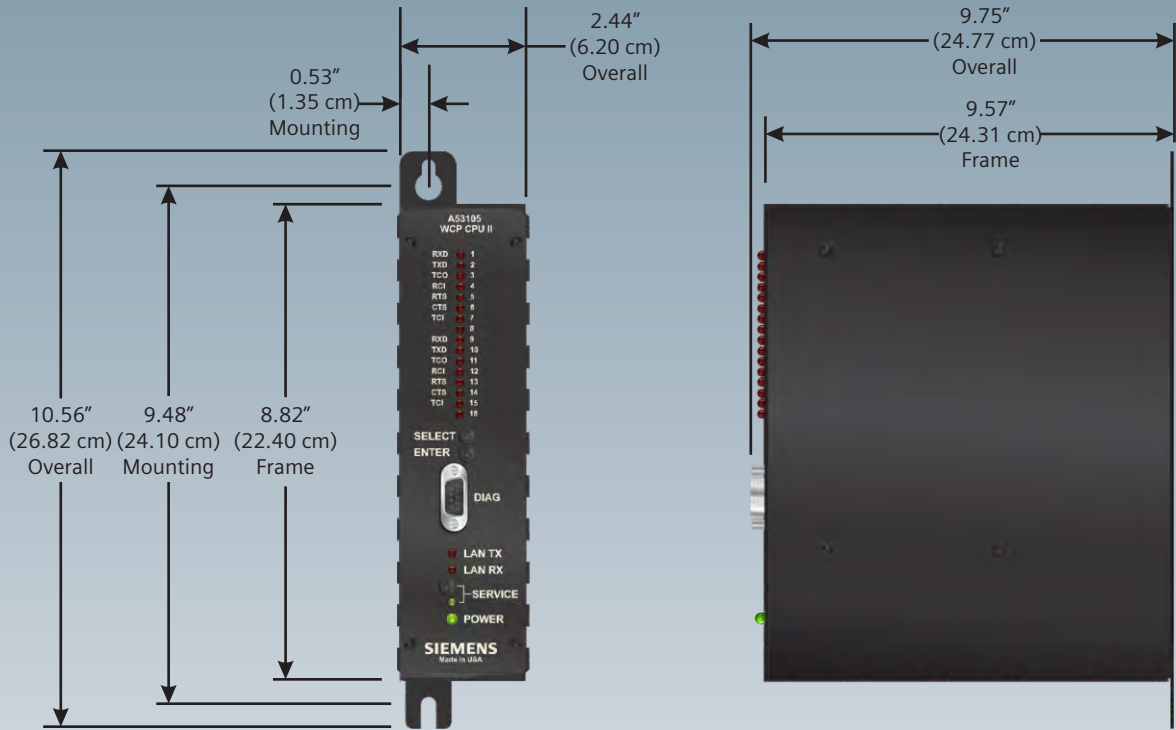- (2) RS-232 25 pin connectors
- (1) DB-9 9 pin connector
- NO cables

Applicable for all WCP CPU Modules

NYK:9000531060001	NYK:9000531060004

WCP DC / DC Converter w/ Chassis Grounding
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8 lbs. (3.62 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 12 VDC
- Output voltage 12 VDC
- Power rating 150 W maximum

WCP DC / DC Converter w/ Chassis Grounding
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8 lbs. (3.62 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 24 VDC
- Output voltage 12 VDC
- Power rating 200 W maximum

NYK:9000531060001	NYK:9000531060004

WCP DC / DC Converter w/ Floating Grounding
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8 lbs. (3.62 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 12 VDC
- Output voltage 13.8 VDC
- Power rating 150 W maximum

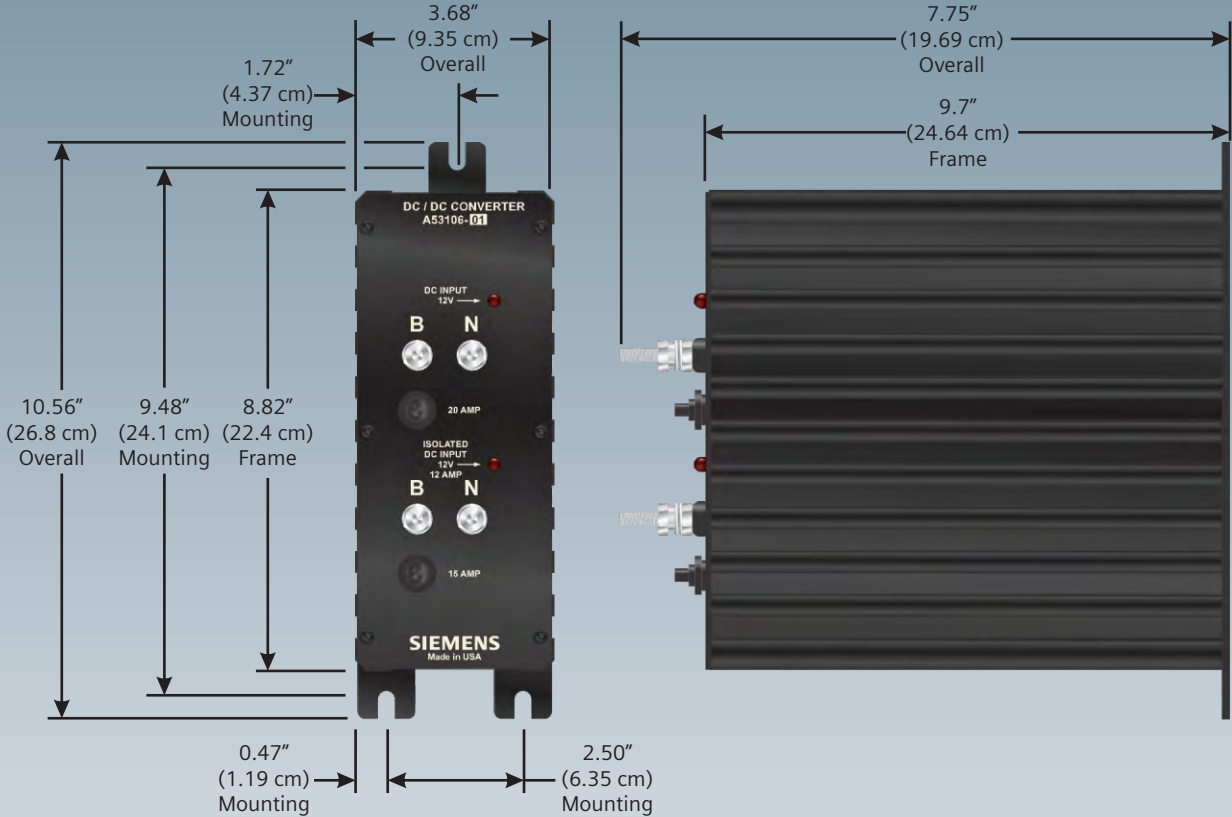**WCP DC / DC Converter w/ Floating Grounding**
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8 lbs. (3.62 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- Output voltage 13.8 VDC
- Power rating 200 W maximum

Applicable for all WCP DC / DC Converter Modules

3.68"
(9.35 cm)
Overall

1.72"
(4.37 cm)
Mounting

7.75"
(19.69 cm)
Overall

9.7"
(24.64 cm)
Frame

10.56"
(26.8 cm)
Overall

9.48"
(24.1 cm)
Mounting

8.82"
(22.4 cm)
Frame

DC / DC CONVERTER
A53106-01

DC INPUT
12V

B   N

20 AMP

ISOLATED
DC INPUT
12V
12 AMP

B   N

15 AMP

SIEMENS
Made in USA

0.47"
(1.19 cm)
Mounting

2.50"
(6.35 cm)
Mounting

NYK:900053412100B

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 935.8875 MHz transmit channel
- 896.8875 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- (1) Z801-08475-0004 antenna cable (4' (1.2 m) long)

NYK:900053412100C

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 935.8875 MHz transmit channel
- 896.8875 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- (1) Z801-08474-0010 antenna cable (10' (3 m) long)

NYK:900053412100D

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 935.8875 MHz transmit channel
- 896.8875 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- NO antenna cable

NYK:900053412200D

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 935.9375 MHz transmit channel
- 896.9375 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- NO antenna cable

NYK:900053412500B

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 936.9375 MHz transmit channel
- 897.9375 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- (1) Z801-08475-0004 antenna cable (4' (1.2 m) long)

NYK:900053412500C

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 936.9375 MHz transmit channel
- 897.9375 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- (1) Z801-08474-0010 antenna cable (10' (3 m) long)

NYK:900053412500D

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 936.9375 MHz transmit channel
- 897.9375 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- NO antenna cable
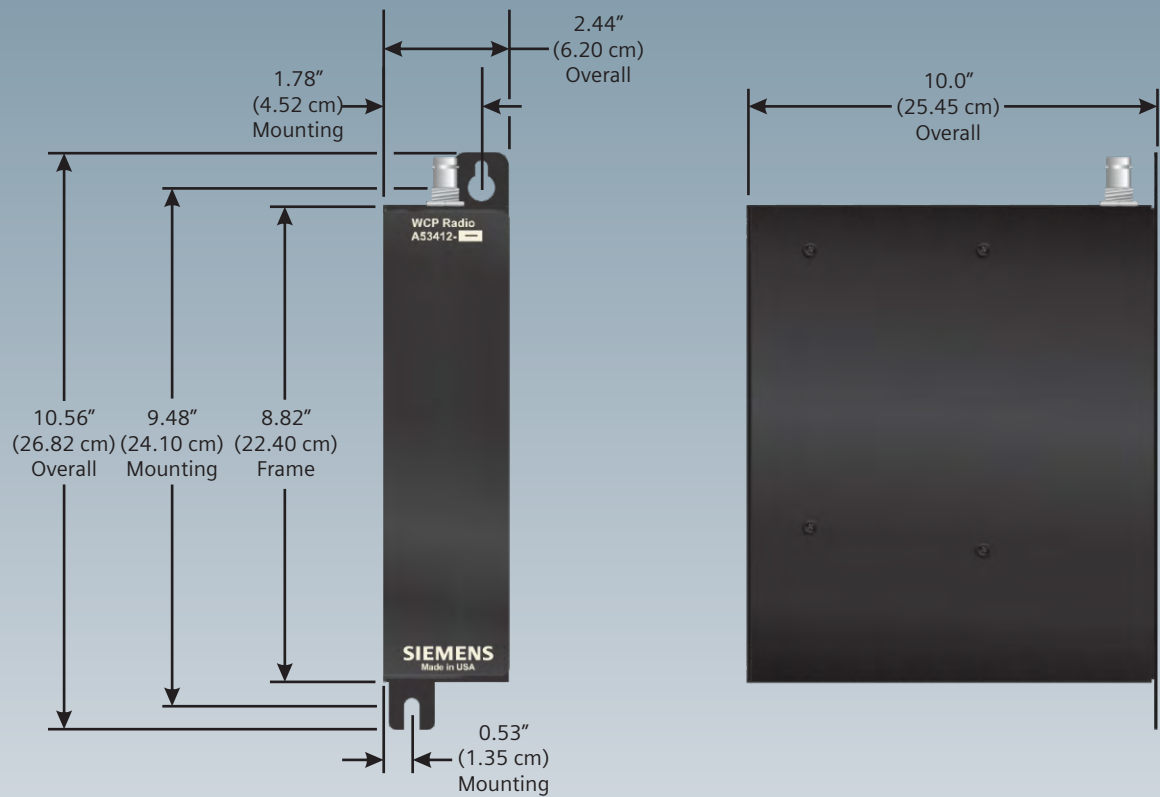
NYK:900053412600D

WCP Radio
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 9.4 lbs. (4.26 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 10 VDC to 36 VDC
- (1) twist connector for radio
- 936.9875 MHz transmit channel
- 897.9875 MHz receive channel
- MDS SD9 radio
- (1) Z706-00275-0000 radio coax cable
- NO antenna cable

SIEMENS Part Number	Description	Weight
WCP Antenna Kits		
NYK:Z913000010000	Yagi antenna ● 6061/T6 aluminum element ● N type female connectors ● 12.6 dBi (10.5 dBd) Gain ● 928 MHz to 956 MHz ● Vertical / Horizontal Polarization ● 1.5:1 VSWR	8.4 lbs. (3.81 kgs.)
NYK:Z801084680000	Antenna mast mount, 90 degree. ● Accommodates masts up to Ø2.38"	6.4 lbs. (2.90 kgs.)
NYK:Z801084690000	Antenna mast mount, 90 degree. ● Accommodates masts from Ø1.5" to Ø3.5"	6.4 lbs. (2.90 kgs.)
WCP Antenna Surge Arresters		
NYK:Z803227100000	**Bulkhead Mounting** ● Meets or exceeds applicable IEC® 60529 IP65 specifications ● 5/8-24 screw type connectors ● 125 MHz - 1000Hz ● 1.1:1 VSWR ● 20kA ANSI® C62.1 8/20 µs waveform ● Weatherproof	2 lbs. (0.91 kgs.)
NYK:Z803227220000	Hardware Kit for Z803-22710-0000	N/A
NYK:Z935000060000	Coaxial RF cable, Ø1/2" 50 Ω, foam dielectric	N/A
NYK:Z935000080000	Coaxial RF cable, Ø7/8" 50 Ω, foam dielectric	N/A
NYK:9000265610001	Coaxial RF cable, 50 Ω, foam dielectric, mini UHF male to type N male, Ø1/2" X 4' (1.2 m) long	4.2 lbs. (1.91 kgs.)
NYK:Z801084740000	Coaxial RF cable, 50 Ω, foam dielectric, mini UHF male to type N male, Ø1/2" X 10' (3 m) long	7.4 lbs. (3.36 kgs.)

Applicable for all WCP Radios

2.44"
(6.20 cm)
Overall

1.78"
(4.52 cm)
Mounting

10.0"
(25.45 cm)
Overall

WCP Radio
A53412-

10.56"
(26.82 cm)
Overall

9.48"
(24.10 cm)
Mounting

8.82"
(22.40 cm)
Frame

SIEMENS
Made in USA

0.53"
(1.35 cm)
Mounting

I / O Modules

Overview

*Model A53101 I / O Module shown for reference purposes only!
Actual unit selected may vary in mounting and features.*

SIEMENS Bipolar I/O module supplies eight bipolar outputs to replace an LCS unit and to drive existing final stick relays. A total of 14 unipolar indication inputs are also available. The module is controlled by an on-board Echelon® Neuron™ LAN and delivered to the bipolar outputs either continuously or in pulsed format (configurable). Opto-isolated read-back circuits verify delivery of each input. All inputs and outputs are also fully optically isolated to prevent common-mode problems and to enhance their ability to withstand voltage surges.

Inputs are sensed at a configurable rate and the module generates an indication message via LonTalk™ each time a change of state occurs. A programmable indication hold-off time allows interlocking circuits to stabilize before the change-of-state message is generated. The module provides an indication battery output (KINDIS) that can be fed into the input circuits to allow the unit to sense input circuit relay contact states. Additional LonTalk™ messages supported include recheck, diagnostics, configuration control, and error status updates.

Features

● Bipolar outputs for final stick relays

● Front panel LED status indicators are provided for each I/O circuit for ease of maintenance and troubleshooting.

● Input/Output termination points and interface to the module are accomplished via a top-mounted, removable plug connector. Configuration data for the module is retained in a user-programmable EEPROM device located in the connector. This allows the module to be replaced during maintenance without the need for reconfiguration.

● The module operates directly from the signal battery and 2,000 volts rms isolation is provided by the transformer-coupled LonTalk™ interface.

● Unipolar outputs for interface or vital relay drive. It essentially identical to the Bipolar I/O module except that a total of (30) unipolar circuits are supplied. The circuits can be allocated for any combination of inputs and outputs.

● Relay outputs, while sharing roughly the same physical characteristics as the bipolar and unipolar I/O modules, the relay output module contains 15 individually controllable, nonvital relays that provide contact options that can be jumpered to provide a combination of Form A and Form C outputs.

● The module is available with either latched or non-latched relays. Latched relays remain in the previously-set state position and are unaffected by equipment restarts or power failure.

● A latched relay module is typically used to drive vital signal control relays.
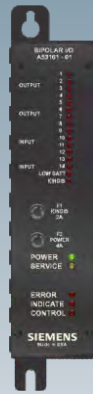
NYK:9000531010001	NYK:9000531020001

Bipolar I/O Module (12 V version)
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8.2 lbs. (3.72 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 9 VDC to 30 VDC
- (14) bipolar inputs
- (8) bipolar outputs
- (1) KINDIS battery output indicators
- Utilizes 9000-53001-0001 I/O Card

Unipolar I/O Module (12 V version)
- Easily mountable on standard relay racks, instrument house backboards or can even be shelf mounted
- Weight is approx. 8.2 lbs. (3.72 kgs.) including connectors
- Operates in -40° F to +160° F (-40°C to +70°C) @ up to 95% Non-Condensing Relative Humidity
- Input voltage 9 VDC to 30 VDC
- Open collector voltage
- Up to (30) unipolar outputs in groups of (8)
- Up to (30) unipolar inputs in groups of (8)
- Utilizes 9000-53004-0001 I/O Card

Applicable for all I/O Modules

2.44"
(6.20 cm)
Overall

0.66"
(1.68 cm)
Mounting

10.0"
(25.45 cm)
Enclosure

10.56"
(26.82 cm)
Overall

9.48"
(24.10 cm)
Mounting

8.82"
(22.40 cm)
Frame

0.53"
(1.35 cm)
Mounting