

Features**Simplex® model series 6351 and 6400 time control centers provide:**

- Control of synchronous wired, power line carrier and digital clock systems
- Simplex BCD (binary coded decimal) time communications selectable as either Standard BCD (time only) or Extended BCD (time and date)
- Programmable daylight saving time correction
- Manual override switches for time controls
- 12- or 24-hour time display, user selectable
- Easily programmed using the LCD time and status display
- Internal battery standby with 60 day backup for program memory and timekeeping
- Four alternate program schedules with 1000 program events available
- AC line synchronous (when 60 Hz powered) or crystal time base
- Remote seconds synchronization input
- Surface/semi-flush wall mount or 19" rack mount

6400 Series Time Control Centers also provide:

- Six programmable control circuits with manual override switches
- Seven day programming with seconds resolution for On/Off control
- Programmed times available to each circuit and each schedule

Optional features:

- RS-232 interface for synchronization to an external time source (GPS receiver, a computer using SIMSYNC software, or to another 6351/6400 Master Time Center)
- Impulse clock control module
- Coded receiver interface
- Temperature compensated crystal oscillator (TCXO)

UL Listed to Standard 863**Description**

Common Features. Time Control Centers Model Series 6351 and 6400 provide accurate time keeping for Simplex secondary clocks, including Simplex BCD time communications, synchronous wired correction, power line carrier current correction, and minute impulse clocks. Support is also available for many non-Simplex clock systems. (Refer to page 4 for additional information about Simplex BCD clock correction communications.)

* Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Safety Products Westminster.



6351/6400 Wall Mount Time Control Center



6400-9004, 19" Rack Mounted Time Control Center

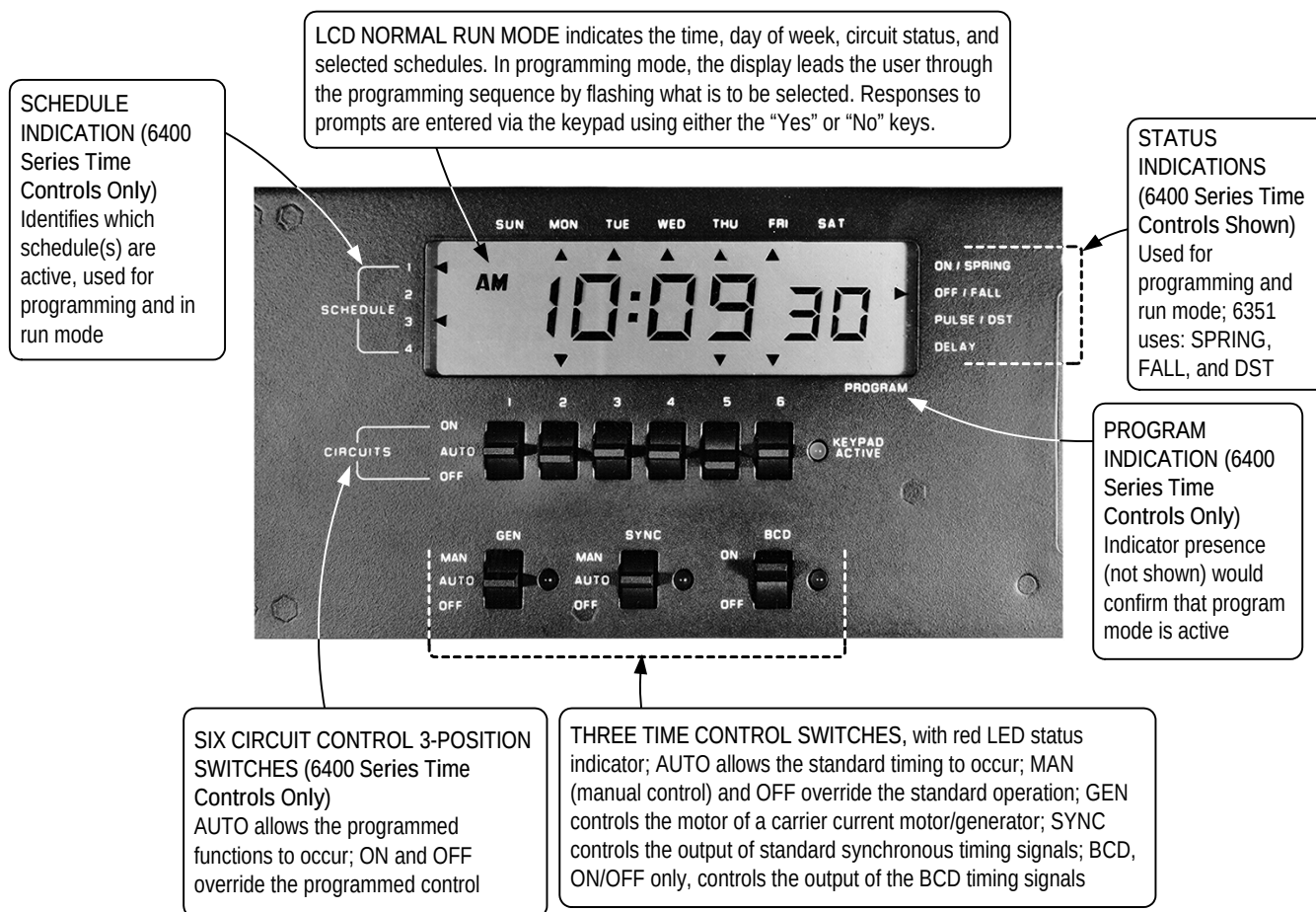
6400 Series Features

Six Output Circuit Control. In addition to clock correction, 6400 Series products also provide six output circuits with operation easily programmed for time, day-of-week, and action and with individual manual override control switches. The LCD readout indicates the status of each of the six circuits and when programming, clearly indicates time, day of week, and the selected status.

Four Schedules Available. Four independent schedules can be easily programmed using the keypad. Schedules can be selected singly or in multiples depending on system requirements.

Secured Access. Manual control switches and the LCD are located behind a locked enclosure. The keypad can also be access code protected.

6400 and 6351 Display and Control Switches



6400 and 6351 Programming Keypad

The 12-position programming keypad is used to set time and date, daylight saving time changes, schedule changes, and selection of 12-hour or 24-hour display format. Keypad entry may be secured by an access code which prevents tampering or unauthorized program modifications.

For wall mounted time control centers, the keypad is located the locked door.

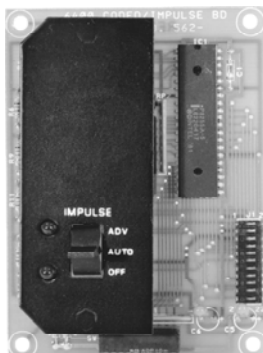


Impulse Clock Correction Module

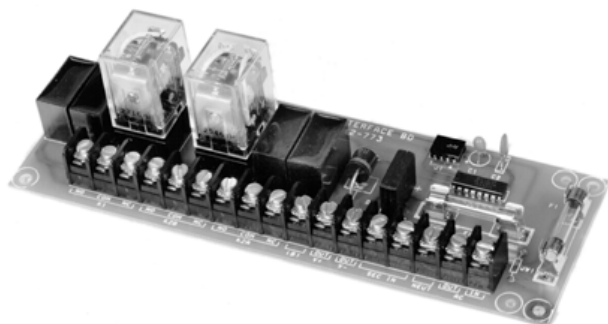
The Impulse Correction Module operates Simplex impulse clocks, or compatible non-Simplex clock systems (impulse and other correction types, see compatibility table). It is available for both 6400 and 6351 Series Time Control Centers on selected models as a standard feature. (Not available for aftermarket additions.)

Module front controls include selection of Auto, Manual Advance, or Off (ADV/AUTO/OFF). Two module front LEDs indicate the outgoing impulse as either Positive (red) or Negative (yellow) polarity.

The Impulse Correction Module connects to an internal control module (shown below) and uses a multi-tapped transformer to provide the required operating voltage. For Simplex impulse clocks, it accumulates lost impulses during a power failure and provides rapid correction pulses to advance the impulse clocks to the correct time after power is restored.



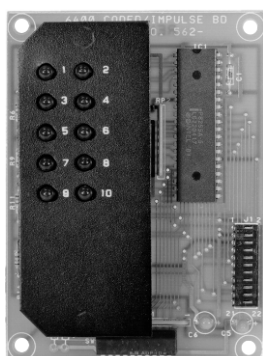
Impulse Correction Module



Impulse Control Output Module

Coded/Dual Coded Module

Time Control Center Model 6400-9003 includes a Coded/Dual Coded module that operates a circuit of wired or power line carrier current controlled, 6803 Series coded, or 6804 Series dual coded relays. Output circuit number one of the 6400-9003 is dedicated to coded relay control, and provides up to 10 programmed control functions on that single circuit. The 10 LEDs on the front panel indicate selection of the relay addressed during programming and manual control. (Not available for aftermarket additions.)



Coded/Dual Coded Module

Impulse Clock Correction Compatibility

The following types of impulse clock systems can be controlled by the Impulse Clock Correction Module. Selection is made using the module's DIP switch.

Brand	Clock Type
Simplex	59th Minute Impulse
	58th Minute Impulse
	44th Minute Impulse
	45th Minute Dual Motor
	59th Minute Dual Motor
	Tower Clocks, 1 Minute Reverse Polarity & 1/2 Minute Reverse Polarity
National Time	Hourly
Faraday	1300 Series
Cincinnati	D Synchronous
	D6, Impulse 12-Hour Correction D3
Stromberg	Synchronous, 56th Minute, Electronic
	Impulse, 58th Minute
Standard Electric Time	FMT Dual Motor, Couch (C452014 through C452019 and C452133 through C452145)
	AR2A and AR3A-Impulse, 60th Minute
	AR2-Impulse, 59th Minute

6400-9503, Impulse Correction Module with Coded/Dual Coded Control

For aftermarket installation in a 6400 Series Time Control Center (wall mount or rack mount), the 6400-9503 module provides the features of both the Impulse Clock Correction Module, and the features of the Coded/Dual Coded Relay Control Module. The Impulse Control Output Module and required transformer is included

This allows both features to be available in the same control module location.



Impulse and Coded/Dual Coded Module

Optional Time Control Modules

6400-9504 TCXO Time Base

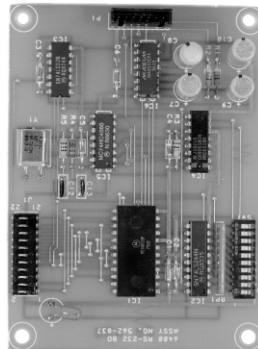
Temperature Compensated Crystal Oscillator (TCXO) Model 6400-9504 is used for applications where power line mains frequency may be unstable and unsuitable as a time reference. It is optionally available for aftermarket installation in either a 6400 Series or 6351 Series Time Control Center. This module provides a source of frequency reference to the central controller with accuracy of ± 3 seconds per month from 32° F to 122° F (0° C to 50° C).



6400-9504 TCXO
Module

6400-9505 RS-232 Interface Module

RS-232 Interface Module 6400-9505 provides a communications link for connection to an external time source including: GPS Receivers, computers using SIMSYNC software, or another 6351/6400 using the 6400-9568 Code Converter (see diagram on page 5). It is optionally available for aftermarket installation in either a 6400 Series or 6351 Series Time Control Center.



6400-9505 RS-232
Interface Module

For GPS connection to highly accurate time using a GPS receiver, refer to document GPS6400BRO1 for details on the GPS/6400 GPS Time Reference Interface Module and compatible Antenna/Receiver GPS-427A.

For computer connection, install the 1603-9821 SIMSYNC software package on a computer with an RS-232 serial port that is connected to the 6400-9505 (see data sheet S1603-9821 for more information). This allows synchronization to the computer time, and if the computer is network connected, to the network server time.

6400-9568 BCD Code Converter

The Model 6400-9568 BCD Code Converter is an external option that receives Standard or Extended Simplex BCD input and provides asynchronous ASCII output via its RS-232, 25 pin serial output port, and selectable BCD output at separate terminals.

Please Note: The term “BCD” as used in this document refers to Simplex proprietary format BCD (binary coded decimal) clock correction time communications.

With Standard BCD input, the Code Converter can conveniently provide time zone offset capabilities for multiple time zone clock displays.

6400-9568 BCD Code Converter (Continued)

With Extended BCD input, the Code Converter provides 24-hour time and date information for synchronization of computers or other compatible RS-232 equipment.



6400-9568 BCD Code Converter and a
6800-9502 Power Supply (ordered separately)

Input options:

- Standard Simplex BCD with hours, minutes, and seconds from a 6351/6400 Time Control Center or other Simplex master time source
- Extended Simplex BCD with hours, minutes, seconds, year, month, day, and Julian date, from a 6351/6400 Time Control Center

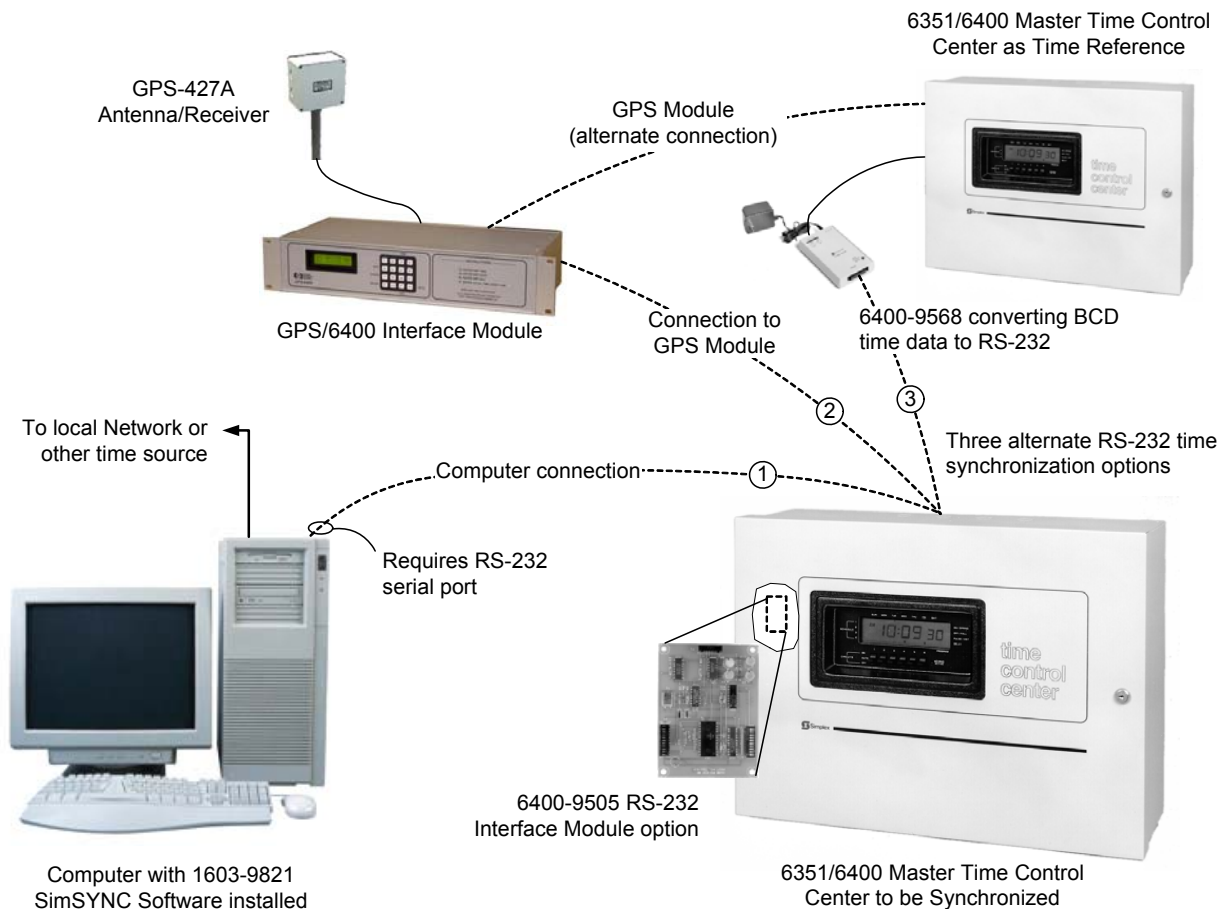
BCD Output details:

- Convert Standard or Extended BCD input to a Standard BCD output with DIP switch selectable time offset of up to ± 12 hours in one hour increments
- Standard BCD output controls up to two Simplex digital clocks within 100 ft (30.5 m); to extend distance and clocks, use the 2301-9513 BCD Data Amplifier (see data sheet S2301-0002 for additional information)

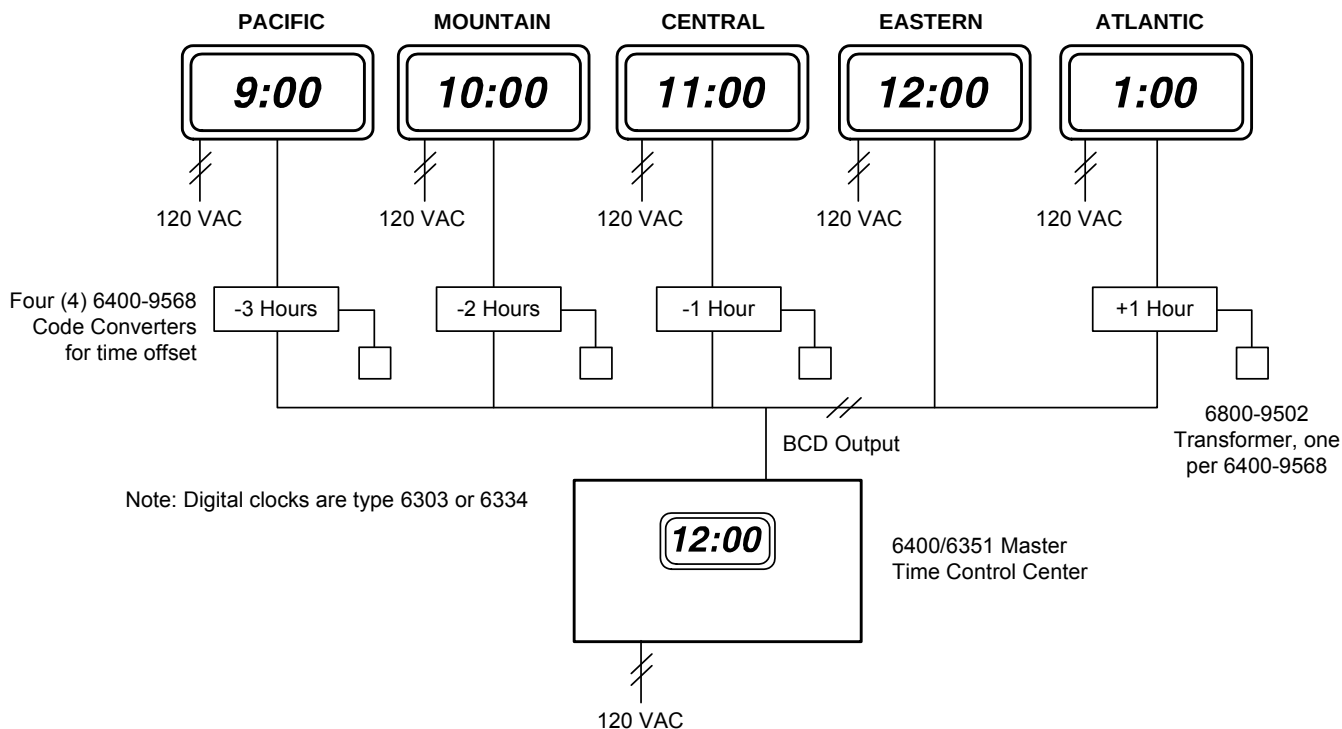
RS-232 connection details:

- Both the BCD and RS-232 outputs are available simultaneously
- With Extended BCD input, the RS-232 serial port output supplies hours, minutes, seconds, year, month, day, and Julian date for computer time synchronization
- A “QT” command from the computer will receive time in 24 hour format
- A “QD” command from the computer will receive the date
- When connected as an input to a 6400-9505, RS-232 Interface Module in a 6351/6400 Time Control Center, separate Time Control Centers can be synchronized
- When connected as an input to a 4100-9816 Dual Port RS-232 module in a 4100ES/4100U fire alarm control panel, the fire alarm system can be synchronized by the Time Control Center (refer to data sheet S4100-0033 for details)

Synchronization Options Using the 6400-9505 RS-232 Interface Module



Control of Multiple Time Zone Displays Using 6400-9568 Code Converters for Time Offset



Product Selection

6351 Series Time Control Centers for Clock Correction

Model	Power	Operation	Description
6351-9001	120/240 VAC, 60 Hz	Standard operation	Wall mount Time Control Center with: BCD time control, synchronous wired clock correction control, and generator control for motor/generator carrier current systems
6351-9002	120/240 VAC, 60 Hz	Includes Impulse Clock Correction Module	
6351-9012	120/240 VAC, 50 Hz		

6400 Series Time Control Centers for Clock Correction with Programmable Circuits

Model	Power	Operation	Description
6400-9001	120/240 VAC, 60 Hz	Standard operation (available as rack mount, see below)	Wall mount Time Control Center with: BCD time control, synchronous wired clock correction control, generator control for motor/generator carrier current systems, and six (6) programmable circuits
6400-9002	120/240 VAC, 60 Hz	Includes Impulse Clock Correction Module	
6400-9052	120/240 VAC, 50 Hz		
6400-9003	120/240 VAC, 60 Hz	Includes 10 Address Coded/Dual Coded Relay Control Module	Wall mount Time Control Center with: BCD time control, synchronous wired clock correction control, generator control for motor/generator carrier current systems, and five (5) programmable circuits
6400-9004	120/240 VAC, 60 Hz	Standard operation	19" Equipment rack mount version, provides the same features as 6400-9001 above

6351 or 6400 Series Time Control Centers, Optional Modules

Model	Description
6400-9504	Temperature Compensated Crystal Oscillator (TCXO), provides a 60 Hz time reference; not for use with 50 Hz systems if BCD correction is used (mounts internally)
6400-9505	RS-232 Interface Module (mounts internally)
6400-9568	BCD Code Converter (requires 6800-9502 Power Supply, ordered separately); external module
6800-9502	Power Supply for BCD Code Converter, 120 VAC input
6400-9507	Retrofit Kit, for mounting into existing backboxes used for Model Series: 941 or 943 (single unit), or 2350/2400
6400-9511	Extended Battery Backup Module; up to 180 days for timekeeping and program memory (mounts internally)
2975-9801	Semi-flush Trim Kit

6400 Series Time Control Centers, Optional Modules

Model	Description
6400-9503	Impulse Correction Module with 10 address Coded/Dual Coded Control Module; reduces programmable circuits to five (5); (uses one of the circuits to provide the coded/dual coded control) (mounts internally)

Specifications

General Specifications

Input Voltage	120/240 VAC, 60 Hz (6400-9052: 120/240 VAC, 50 Hz)
Input Current	0.2 A for basic operation Add current for clock power and output control power
Contact Ratings	5 A @ 120 VAC or 30 VDC, resistive 3 A @ 240 VAC, resistive
Impulse Output Voltage	2 A @ 24, 36, or 48 VDC
Finish and Dimensions (see diagrams on page 8)	Wall Mount Finish: Beige with black trim Dimensions with door: 23 $\frac{7}{8}$ " W x 17 $\frac{7}{16}$ " H x 7 $\frac{1}{2}$ " D (607 mm x 443 mm 191 x mm)
	Rack Mount Finish: Black with black trim Dimensions: 19" W x 5 $\frac{1}{4}$ " H x 14" D (483 mm x 133 mm x 356 mm)
Time Base	AC Line Monitor, line frequency dependent
	DC Quartz $\pm$ 30 seconds/month from 32° to 122°F (0° C to 50° C)
TCXO (Option)	$\pm$ 3 seconds/month from 32° to 122°F
Temperature Range	32° to 122°F (0° to 50°C)
Relative Humidity	95% non-condensing
BCD Output	$\pm$ 15 V Data @ 60 bps, 50 loads maximum

Time Control Center Clock Correction Capacities

Impulse Clock Control	Up to 33 clocks. Use 2811-series impulse power boosters for additional clocks (see data sheet S2811-0001 for details)
Synchronous	Up to 70 clocks (120 VAC). Use 2088-series relays for additional clocks (see data sheet S2088-0010 for details)
Electronic	Practically unlimited; electronic clocks use an audio signal superimposed upon the 60 Hz building power and will operate to the extent signal is available within the building power distribution (see data sheet S6310-9112 for details)
Digital BCD	Up to 50 clocks; use 2301 Series data line amplifiers for additional clocks (see data sheet S2301-0002 for details)

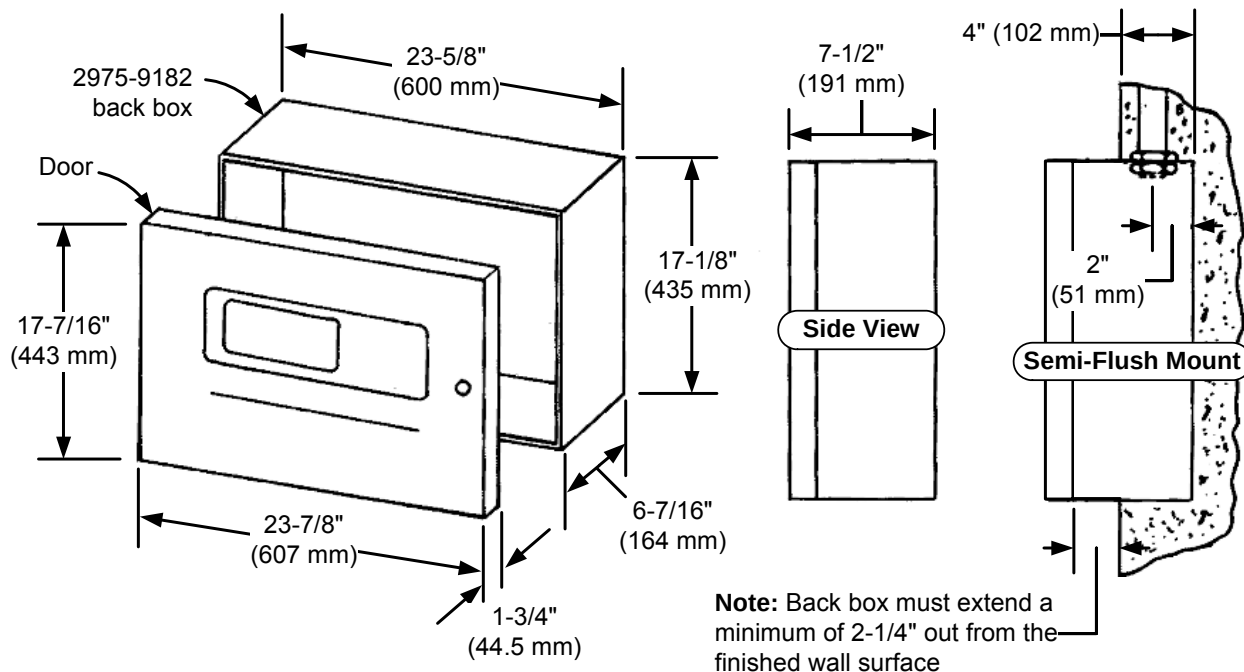
6400-9568 BCD Converter Specifications

Input Power	12 VAC, 700 mA maximum
Wiring	Terminal block input and output for BCD; RS-232 output is via 25 pin serial port
Finish	Tan
Dimensions	5 $\frac{3}{4}$ " x 3 $\frac{5}{8}$ " x 1 $\frac{1}{8}$ " (146 mm x 91 mm x 29 mm)
6800-9502 Power Supply	Class 2 transformer; 120 VAC, 60 Hz, 11 W input; 12 VAC, 700 mA output
Converter and Power Supply Environmental Ratings	Temperature 32° to 122°F (0° to 50°C)
	Relative Humidity 95% non-condensing

Technical Publication Reference

6351/6400 Installation/Operating Instructions	574-403 (MC6-21-100)
6400 Programming Instructions	574-404 (MC6-41-100)
6400 Service Instructions	MC6-51-100
6400-9568 BCD Code Converter Installation/Operating Instructions	574-411 (MC6-21-105)
Retrofit Instructions for Insertion into 941/943/2350 Back Box	MC6-21-102

Wall Mount Installation Reference



Rack Mount Installation Reference



Note: Design allows rail or frame installation mode

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