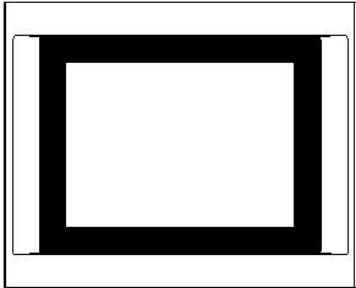


3500/94 VGA Display

Bently Nevada™ Asset Condition Monitoring



Description

The 3500/94 VGA Display uses a standard color VGA monitor with “Touch Screen” technology to display 3500 data. This product has two components, the 3500/94 VGA module and its I/O card, and secondly, the VGA display monitor. The display monitor, with standard cabling, can be mounted up to 8 m (25 ft) from the rack.

The 3500/94 displays all 3500 Machinery Protection System information, including:

- System Event List
- Alarm Event List
- All module and channel data
- 3300 style rack view (API-670)
- Current alarm data (quick view)
- Nine custom display options.

All are accessed through a Main Menu using a Touch Screen.

Users configure the 3500/94 modules for language and for the type of VGA display through the 3500 Rack Configuration Software. All other types of data configurations are done locally at the display, giving the operator control over the displayed data. Users may configure nine custom screens locally. As an example, one custom screen may show all the 1X measurements, while another shows all the Gaps., or the custom screens may be organized into train groupings. Users can organize all system data into any specified sets assigned the data to a custom screen. An API-670 compatible screen is also selectable. This screen is similar to a 3300 view of the rack. Each slot shows the Direct or Gap value on the face of the module with OK and Bypass LEDs.

Multiple Rack Feature

Selecting the 3500/94 Display Router Box provides an additional viewing feature. This feature allows users to view a maximum of four racks with one display. Each rack must be individually viewed, but the rack address and alarm status of each rack is always visible in the upper right corner of the screen. The Display Router Box must be located within 6 m (20 ft) of each 3500 rack.



imagination at work

Specifications and Ordering Information
Part Number 148635-01
Rev. E (05/09)

Display Monitors

We offer three approved display monitor types, which are the only types that will properly interface to the 3500/94 VGA modules. Each display is intended to meet different application requirements. It is important that you make the right selection for your application. For outdoor installations, all display types require a hood to block direct sunlight. Each display requires a separate power supply. As an option item, the KVM Extender box may be selected for remote sites up to 305 m (1000 ft). While the KVM Extender will meet most viewing requirements, the extender will degrade picture image quality and may be affected by noisy environments. Therefore, users should avoid using the KVM Extender unless the standard 8 m (25 ft) cable length is not adequate.

All display monitor types are "Touch Screen". Because the "Touch Screen" controllers differ, users must configure each display monitor type using the 3500 Rack Configuration Software.

The 3500/94 offers a Display Router Box that allows up to four 3500 racks to drive a single display. The Display Router Box acts as a switch box that allows the operator to switch the display between racks. An important feature of the Display Router Box is its ability to show the alarm and OK status of each connected rack.

Specifications

3500/94 VGA Display Unit

Inputs

Power consumption:

4.6 watts max.

High-speed network:

Monitor status, data and values.

RS232 port (I/O):

Touch controller data.

Outputs

OK LED:

Indicates proper operation of the module.

TX/RX LED:

Indicates communications between other system modules.

VGA port (I/O):

Analog red, green, blue and sync signals to the display.

Environmental Limits

Operating Temperature:

-30 °C to +65 °C
(-22 °F to + 150 °F)

Storage Temperature:

-40 °C to +85 °C
(-40 °F to + 185 °F)

Humidity:

95%, noncondensing.

Compliance and Certifications

EMC

Standards:

EN 61000-6-2 Immunity for Industrial Environments
EN 61000-6-4 Emissions for Industrial Environments

European Community Directives:
EMC Directive 2004/108/EC

Electrical Safety

Standards:

EN 61010-1

European Community Directives:
2006/95/EC Low Voltage

Hazardous Area Approvals

North America

Approval Option (01)

Class I, Div 2

Groups A, B, C, D

T4 @ Ta = -20 °C to +65 °C

(-4 °F to +150 °F)

Physical

Monitor Module

Dimensions (Height x Width x Depth)

241.3 mm x 24.4 mm x 241.8 mm

(9.5 in x 0.96 in x 9.52 in)

Weight:

0.73 kg (1.6 lb.)

I/O Module

Dimensions (Height x Width x Depth)

241.3 mm x 24.4 mm x 99.1 mm

(9.50 in x 0.96 in x 3.90 in)

Weight:

0.34 kg (0.75 lb.)

Rack Space Requirements

Monitor Module:

1 full-height front slot

I/O Module:

1 full-height rear slot

Specifications and Ordering Information
Part Number 148635-01
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KVM Extender

Mounting

Shelf top

Power Input

100 to 240 Vac, 50-60 Hz

Agencies

CE

Temperature Range

0 °C to 40 °C
(32 °F to 104 °F)

Humidity

90%

Class 1, Div 2

Not approved

NEMA 4X

Not approved

3500/94 Display Router Box

Inputs

Power +24vdc
+/- 6%:

4.7 watts max.

Input range:

22.5 to 25.5 Vdc input.

VGA inputs (4)

Video image.

RS232 inputs (4):

Touch controller data.

Outputs

OK Status LED:

Indicates proper operation.

VGA Output (1):

Video image.

RS232 Output (1):

Touch control data.

Environmental Limits

Operating Temperature:

-30 °C to +65 °C
(-22 °F to + 150 °F)

Storage Temperature:

-40 °C to +85 °C
(-40 °F to + 185 °F)

Humidity:

95%, noncondensing.

Compliance and Certifications

EMC

Standards:

EN 61000-6-2 Immunity for Industrial Environments
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Class I, Div 2

Groups A, B, C, D

T4 @ Ta = -20 °C to +65 °C

(-4 °F to +150 °F)

Physical

Monitor Module

Dimensions

(Height x Width
x Depth)

Module HxWxD:

22.1mm x 127mm x 241.32mm

Weight:

0.41kg (0.90 lb.)

Ordering Considerations

The 3500/94 requires the following (or later) firmware and software revisions:

3500/94 Firmware	Rev C
3500/01 Software(Rack Config)	Rev 3.10
3500/02 Software(Op Display)	Rev 2.21
3500/03 Software(Data Aqu)	Rev 1.22

The recommended display monitor option is the RS Power Station. This space-saving and durable display is designed for excellent viewing quality in industrial applications.

The Elo Entuitive displays should be used in light industrial environments where they are protected from harsh usage. These two displays are similar to those used for personal computers. Also, the Display Router Box, which allows one display to serve up to 4 racks, may be used to reduce the number of displays required. When connected, the Display Router Box allows the operator to view all racks by switching between them (note that only one rack can be viewed at a time). All 3500 racks must be located within 20ft of the Display Router Box.

We recommend that the user locate the display within 25 feet of the 3500 rack as the video driver circuit is optimized for this range. Cabling lengths greater than 25 feet will degrade the picture quality. When an application requires an extension, the KVM Extender may be used. The KVM Extender, will reduce picture quality to some degree, although typically the quality of the picture image will still be acceptable. The KVM Extender must be used indoors and it is not rated for potentially hazardous areas.

Ordering a Display Router Box

AA options 13, 14 and 15 are for the Display Router Box. To order multiple racks with one display, do the following:

1. The first rack must call out an AA option between 01 and 08; this selects the desired display type.
2. The second rack must call out an AA option of 13 or 14; this selects the Display Router Box (including cables for two racks). Option 13 does not include a power supply. If an AA option of 01 through 04 was selected on the first rack, the power supply is already included. If an AA options of 05 through 08 was selected on the first rack, option 14 will be required (on the second rack) to include the power supply for the Display Router Box.
3. The Third rack must call out an AA option of 15; this selects the cables necessary for a third rack.
4. The fourth rack must call out an AA option of 15; this selects the cables necessary for a fourth rack.

Note: Each 3500 rack requires a 3500/94 VGA module and an I/O card; because of this, each AA option is structured to automatically include them.

Ordering Information

System Display

3500/94-AXX-BXX-CXX

A: Display Monitor Option:

- | | |
|-----------|--|
| 01 | RS Power Station
Panel mount
DC Supply-Industrial included |
| 02 | RS Power Station
19-inch EIA Rack mount
DC Supply-Industrial included |
| 03 | RS Power Station
Panel mount
Class 1, Division 2
DC Supply-Industrial included |
| 04 | RS Power Station
19-inch EIA Rack mount
Class 1, Division 2
DC Supply-Industrial included |
| 05 | Elo Entuitive CRT Station Shelf
top mount |
| 06 | Elo Entuitive LCD Station Shelf
top mount |
| 07 | Elo Entuitive LCD Station Wall
mount |
| 08 | Elo Entuitive LCD Station 19-
inch EIA Rack mount |
| 09 | Discontinued |
| 10 | Discontinued |
| 11 | Discontinued |

Specifications and Ordering Information
Part Number 148635-01
Rev. E (05/09)

	12	Discontinued	148641-01	
	13	Display Router Box (cables included for two racks)		19" EIA mounting plate Elo Entuitive LCD Station
	14	Display Router Box with +24vdc Supply (cables included for two racks)	148642-01	
	15	Cables for Display Router Box (one rack)		19" EIA Monitor bracket Elo Entuitive
B:	Extender and Cable Length Option:		148654-01	
	00	None		RS Power Station
	01	KVM Extender 250 Foot (76.25 Meters) PVC cable	148653-01	
	02	KVM Extender 500 Foot (152.5 Meters) PVC cable		RS Power Station, class 1, division 2 option.
	03	KVM Extender 1000 Foot (305 Meters) PVC cable	149356-01	
C:	Agency Approvals Option:			Display Router Box
	00	None	149710	
	01	CSA/NRTL/C		Split digital cable for the Display Router Box (25ft)
<hr/>				
Accessories and Spares				
148635-01		3500/94 Data sheet	163029	
148636-01		3500/94 Manual		VGA cable for the Display Router Box (33ft)
145988-01		3500/94 Main module	161264-01	
147663-01		3500/94 I/O module	146190-01	DC Supply-Industrial (used with the RS Power Station and Display Router Box)
148637-01		VGA Extension cable 20 Foot		19" EIA mounting plate, RS Power Station
148638-01		Serial Touch Cable 25 Foot	148651-01	
148658-01		Elo Entuitive CRT Station	148652-01	KVM Extender 250 Foot
148659-01		Elo Entuitive LCD Station	148650-01	KVM Extender 500 Foot
148639-01		Wall mount bracket Elo Entuitive LCD Station	148350-0250	KVM Extender 1000 Foot
148640-01		Monitor bracket Elo Entuitive	148350-0500	CAT5 cable 250 Foot PVC
			148350-1000	CAT5 cable 500 Foot PVC
				CAT5 cable 1000 Foot PVC

Display Monitor Specifications

	Elo Entuitive CRT Station	Elo Entuitive LCD Station	RS Power Station
Size	15"	15"	15"
Type	CRT	LCD	LCD
Industrial hardened	No	No	Yes
Mounting Styles	Shelf top	Shelf top, Wall mount or 19" Rack mount.	Panel mount Or 19" Rack mount
Power	90 to 264 Vac 50/60 Hz 80 watts	AC /DC power adapter 12 Vdc at 3.75 amps, 45 watts	20 to 36 Vdc, 30 W. DC Supply included.
Agencies	UL, CUL, FCC, CE, TUVGS	UL, CUL, TUV, FCC, CE	CE, UL, CUL
NEMA 4X	No	No	Yes
Class 1, Div 2	No	No	Optional
Temperature	0 to 40 °C	0 to 45 °C	0 to 65°C for full unit. -30°C to 65°C for bezel and screen. See notes.
Humidity	80% RH	80% RH	95% RH
Touch Interface	Resistive	Resistive	Resistive
Manufacture	EloTouch	EloTouch	CTC-Parker
Dimensions (whd) inches	14.4x14.2x14.8	15.35x15.39x8.19	16.8x13.3x3.8. Panel cutout 15.90 X 12.45 (wh)
Weight Shipping	14.0 kg (30.8 lb) 15.96 kg (35.2 lb)	7.26 kg (16 lb) 8.84 kg (19.5 lb)	7.80 kg (17.2 lb) 10.0 kg (22 lb)
Warranty	2 years	3 years	2 years
Notes	Recommended for light industrial use. Tested as ITE for European standard EN55022 class B and EN60950	Recommended for light industrial use. Space saver. Tested as ITE for European standard EN55022 class B and EN60950	Recommended for industrial use. Best fit for most applications. The minimum temperature rating is 0°C for the electrical components on the rear of the display. When the screen and bezel is to be exposed to temperatures below 0°C, a heated enclosure is required for the rear components.

Figure 7

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