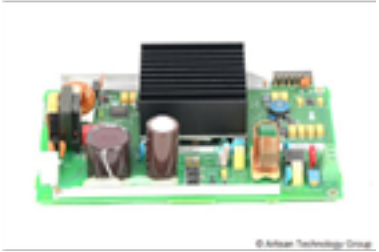
Allen-Bradley A77144-280-54

Power Supply Board



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Troubleshooting Chart

Problem	Probable Causes	Corrective Actions
Clock Module Battery Low message is displayed.	Internal parameters corrupt.	Reload application and cycle power to the terminal.
	Clock module battery failure.	Replace clock module as described in instructions provided with clock module kit. For PanelView 300 Micro, clock module cannot be replaced.
Cannot transfer application from memory card.	Memory card is not properly installed.	Verify correct installation.
	Application is too large for terminal memory.	Reduce size of application file.
	Data checksum is incorrect.	Check that memory card is properly seated. Application may be corrupt.
	Invalid file format.	Verify file format (.PVA) being transferred.
Cannot transfer application to memory card.	Memory card is not properly installed.	Verify correct installation.
	Memory card is write protected.(1)	Change memory card protection switch.
	File currently exists on memory card.(1)	Erase and reformat card.
	Application file is too large, not enough space on memory card.	Reduce size of application file or erase/format memory card.
	Invalid memory card format.(1)	Replace or reformat memory card. If problem continues, try another card.
	Data checksum is incorrect.	Check that card is installed correctly. If problem continues, try another card.
	Application does not exist.(1)	Check the Terminal Info screen to verify that an application exists.
Screen objects do not function.(1)	Terminal not communicating with controller.	Check status of COMM Status indicator. See problem No communication with SLC or PLC controller for more information.
	Terminal in screen saver mode.	Access Screen Setup from the terminal Configuration Mode to check if terminal is in Screen Saver Mode.
Application file name appears as ******* on Terminal Info screen.	Application is invalid.	Download application and try again.
	Application is unusable because of error.	Download new application.
Area on color screen appears dark.	One of the backlight tubes has burnt out.	Replace color backlight.
Screen objects are not visible.	Correct power is not applied.	Verify power connections.
	Contrast or intensity is not set correctly.	Access Screen Setup on the Configuration Mode menu and adjust the contrast. On keypad terminals, press the left and right arrow keys simultaneously, then press [F9] or [F15].
	Terminal is in screen saver mode.	Access Screen Setup on the Configuration Mode menu to see if terminal is set for screen saver mode.
	PV550 backlight lamp is not on.	Access Screen Setup on the Configuration Mode menu and turn on backlight.
	Terminal's backlight is burnt out.	Replace backlight.

Troubleshooting Chart

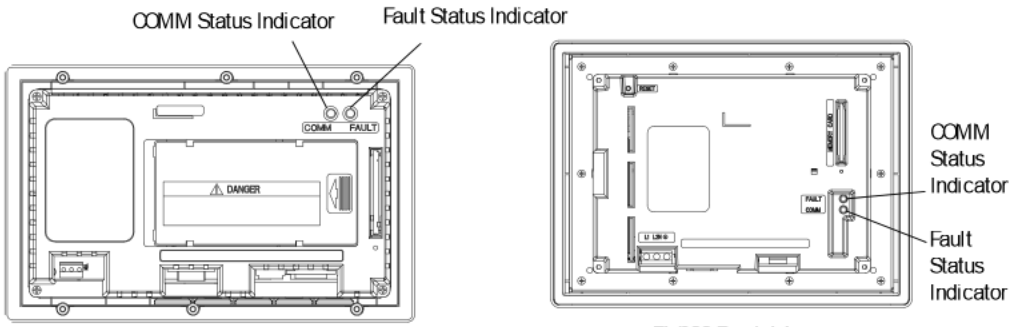
Problem	Probable Causes	Corrective Actions
Values do not update on display but appear as asterisks ****	Terminal is not communicating with controller.	Check status of COMM Status indicator. Refer to problem No communication with SLC or PLC controller for more details.
	Value is invalid or exceeds the field width defined for the object.	Change the field width for the object.
Can't enter Configuration Mode when pressing Left and Right arrow keys simultaneously.	Left and right arrow keys are assigned to screen objects in the terminal application.	Contact Allen-Bradley technical support for assistance.

(1) Terminal displays a warning message with instructions if these errors occur.

Interpret Status Indicators

On PanelView terminals (except PanelView 300 Micro), use the COMM and Fault Status indicators to isolate operating problems. The illustration below shows the location of these indicators on some terminals.

See Chapter 1 for status indicator locations on other terminals.



PV550 Back View

PV900 Back View
PV600/PV1000 is similar

On PanelView 300 Micro terminals, view the Comm and Fault indicators in the terminal configuration mode (Communication Setup selected).

DF1, DH-485, and DH+ Status Indications

Status Indicator	This Pattern	Indicates
Comm[1]	Solid Fill	Normal operating state (no communication faults).
	No Fill	Fault detected. Make sure controller is run mode Verify baud settings of terminal and controller Verify proper terminal to controller connections
	Flashing	When power is first applied (momentarily).
	Blinking	No communication established. For DF1 terminals, the Comm indicator flashes until an application is loaded.
Fault	No Fill	Normal operating state
	Solid	Fault detected. Cycle power to the terminal. If the fault still exists, the terminal requires servicing.
	Blinking	Hardware is functioning but no application is loaded or the current application is corrupt. Reload the application into the terminal.

(1) Comm Status indicator stays on until powerup self-tests are complete.

Remote I/O Status Indications

Status Indicator	This pattern	Indicates
Comm[1]	Solid Fill	Normal operating state (no communication faults)
	No Fill	Communication not functioning Verify that baud rate and rack settings match the PLC settings Verify proper terminal to controller connections Verify that the PLC enables remote I/O communication
	Blinking	No communication established. PLC is in program mode.
	Flashing	When power is first applied (momentarily)
Fault	No Fill	Normal operating state
	Solid Fill	Fault detected. Cycle power to the terminal. If the fault still exists, the terminal requires servicing.
	Blinking	Hardware is functioning but no application is loaded or the current application is corrupt.

(1) Comm Status indicator stays on until powerup self-test are complete

DeviceNet, ControlNet, and EtherNet/IP Network Indicators

Status Indicator	This Pattern	Indicates
Comm	Solid Fill	Normal operating state (no communication faults).
	No Fill	Hardware failed.
	Flashing	When power is first applied (momentarily).
	Blinking	No communication established.
Fault	Solid Fill	Hardware failed.
	No Fill	Normal operating state (no communication faults).
	Blinking	Hardware is functioning but no application is loaded or the current application is corrupt.

Clean the Display Window

Follow these steps to clean the display window.

ATTENTION

Use of abrasive cleansers or solvents may damage the window. Do not scrub or use brushes.

1. Disconnect power from the terminal at the power source.
2. Use a clean sponge or a soft cloth to clean the display with a mild soap or detergent.
3. Dry the display with a chamois or moist cellulose sponge to avoid water spots.

Remove Paint and Grease

Remove fresh paint splashes and grease before drying by rubbing lightly with isopropyl alcohol (70% concentration). Afterward, provide a final wash using a mild soap or detergent solution. Rinse with clean water.

Equipment Hose-downs

Be aware that screen objects on touch cell terminals may activate during equipment hose-downs.

ATTENTION

Because touch terminals have sensitive touch cell regions, it is possible for screen objects to activate during equipment hose-downs.

Replace the Clock Module

The real-time clock (RTC) module contains a lithium battery used only by the real-time clock. The battery is not used for application backup or input retention. The clock module has a typical life expectancy of seven years.

TIP The real-time clock on the PanelView 300 Micro terminal is not replaceable.

The clock module replacement kits for the PanelView terminals are listed on page 56 under Replacement Parts. Replacement instructions are provided with the kits.

ATTENTION

The clock module contains lithium. Do not attempt to dispose of the module in a fire or incinerator. Doing so may cause the clock module to explode. Follow disposal regulations in your area for lithium battery disposal.

Replace the Backlight

Replacement backlights are available for the PanelView terminals.

See Replacement Parts on page 56 for the catalog numbers. Replacement instructions are provided with the kits.

TIP The backlight on the PanelView 300 and 300 Micro terminal, the PanelView 550 (series H and above) keypad and 550 (series B) touch screen, and PanelView 600 touch screen is not replaceable.

ATTENTION

The PanelView 600 and PanelView 1000 LCD backlights contain mercury. At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

Specifications

PanelView 300 Micro Terminal

Electrical	
DC Power Supply Voltage Limits Power Consumption	 11 30V DC (24V nominal), Class 2 Power Supply 2.5 W maximum (0.105A @24V DC)

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only), IP54, IP65
Weight	284 g (10 oz.)
Dimensions mm inches	 133 (H) x 112 (W) x 48 (D) 5.23 (H) x 4.38 (W) x 1.87 (D)
Installed Depth	35mm (1.39 in.)

Display	
Type	Liquid Crystal Display (LCD) with integral LED backlight (100,000 hour life)
Size	73 mm (w) x 42 mm (h) 2.87 in. (w) x 1.67 in. (h)
Pixels	128 x 64

Terminal Memory	
Total Application Flash Memory	240K bytes (application screens)

Environment	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-20 85 C (-4 188 F)
Relative Humidity (noncondensing)	5 95% at 0 55 C (32 131 F)
Heat Dissipation	2.5 Watts (8.5 BTU/Hour)
Shock (operating, nonoperating)	30 g/50 g
Vibration (operating)	2 g up to 2,000 Hz

Character Sizes (Pixel size = 0.48 x 0.48 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
4 x 6	31	10	1.9 x 2.9
6 x 8	20	7	2.9 x 3.8
6 x 16	20	3	2.9 x 7.7
6 x 24	20	2	2.9 x 11.5
12 x 8	10	7	5.8 x 3.8
12 x 16	10	3	5.8 x 7.7
12 x 24	10	2	5.8 x 11.5
18 x 8	6	7	8.6 x 3.8
18 x 16	6	3	8.6 x 7.7
18 x 24	6	2	8.6 x 11.5

PanelView 300 Terminal

Electrical	
DC Power Supply Voltage Limits Power Consumption	 18 32V DC (24V DC nominal), Class 2 Power Supply 6 Watts (0.25 Amps at 24V DC)

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only), IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight	673 g (1.48 lb)
Dimensions mm in	 197 (H) x 140 (W) x 82 (D) 7.76 (H) x 5.53 (W) x 3.21 (D)
Installed Depth	69 mm (2.73 in.) 122.4 mm (4.82 in.) with memory card retainer 216 mm (8.5 in.) with memory card retainer and clearance to insert and remove memory card

Display	
Type	Liquid Crystal Display (LCD) with integral LED backlight (100,000 hour life)
Size	73 mm (w) x 42 mm (h) 2.87 in. (w) x 1.67 in. (h)
Pixels	128 x 64

Terminal Memory	
Total Application Flash Memory	240K bytes (application screens)

Environment	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-25 85 C (-4 188 F)
Relative Humidity (non-condensing)	5 95% at 0 55 C (32 131 F)
Heat Dissipation	6 Watts (13 BTU/HR)
Shock (operating/non-operating)	15 g/30 g
Vibration (operating)	2 g up to 2,000 Hz
Airborne Contaminants(1)	ANSI/ISA-S71.04-1985 severity level G3, reference EN60654-4:1998 Class 3

(1) Only applicable to conformal coated products: 2711-K3A5L1K

Character Sizes (Pixel size = 0.48 x 0.48 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
4 x 6	31	10	1.9 x 2.9
6 x 8	20	7	2.9 x 3.8
6 x 16	20	3	2.9 x 7.7
6 x 24	20	2	2.9 x 11.5
12 x 8	10	7	5.8 x 3.8
12 x 16	10	3	5.8 x 7.7
12 x 24	10	2	5.8 x 11.5
18 x 8	6	7	8.6 x 3.8
18 x 16	6	3	8.6 x 7.7
18 x 24	6	2	8.6 x 11.5

PanelView 550 Terminals

Electrical	
DC Power Supply Voltage Limits Power Consumption Supply Voltage Limits (touch screen only) Power Consumption (touch screen only)	 18 30V DC (24V DC nominal) 18 W, max (0.75 A @ 24V DC) 18 32V DC (24V DC nominal) 18 W, max (0.75 A @ 24V DC)
AC Power Supply Voltage Limits Power Consumption	 85 264V AC, 47 63 Hz 45 VA maximum

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only), IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight Keypad, Keypad & Touch Touch Screen	 1.2 kg (2.7 lb) .93 kg (2.1 lb)
Dimensions- Keypad, Keypad & Touch mm in	 167 (H) x 266 (W) x 106 (D) 6.57 (H) x 10.47 (W) x 4.17 (D)
Dimensions- Touch Screen mm in	 152 (H) x 185 (W) x 82 (D) 6.00 (H) x 7.28 (W) x 3.20 (D)
Installed Depth- Keypad, Keypad & Touch	86 mm (3.39 in.) 118 mm (4.64 in.) with memory card retainer 207 mm (8.15 in.) with memory card retainer and clearance to insert and remove memory card
Installed Depth- Touch Screen	64 mm (2.54 in.) 109 mm (4.30 in.) with memory card retainer 188 mm (7.40 in.) with memory card retainer and clearance to insert and remove memory card

Display	
Type	Liquid Crystal Display (LCD)
Size	120 x 60 mm (4.75 x 2.38 in.)
Pixels	256 x 128
Touch Cells	128 (16 columns x 8 rows)
Touch Cell Size	16 x 16 pixels

Terminal Memory	
PV550 (Series E or later) or PV550T (Series A or later) Total Application Flash Memory	240K bytes (application screens)
PV550 (Prior to Series E) Total Application Flash Memory	112K bytes (application screens)

Environment	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-20 70 C (-4 158 F)
Relative Humidity (non-condensing)	5 95% at 0 30 C (32 86 F) 5 75% at 31 40 C (88 104 F) 5 50% at 41 55 C (106 131 F)
Heat Dissipation	20 W (69 BTU/HR) for AC Power or DC Power
Shock (operating/non-operating)	30 g/50 g
Vibration (operating)	2 g up to 2,000 Hz

Character Sizes (Pixel size = 0.47 x 0.47 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
6 x 8	40	16	2.2 x 3.2
6 x 16	20	16	3.8 x 5.6
6 x 24	13	16	3.8 x 8.4
12 x 8	40	8	7.6 x 2.8
12 x 16	20	8	7.6 x 5.6
12 x 24	13	8	7.6 x 8.4
18 x 8	40	5	11.2 x 2.8
18 x 16	20	5	11.2 x 5.6
18 x 24	13	5	11.2 x 8.4

PanelView 600 Color Keypad and Touch Terminals

Electrical	
AC Power Supply Voltage Limits Power Consumption	 85 264V AC, 43 63 Hz 60 VA maximum
DC Power Supply Voltage Limits Power Consumption	 18 32V DC (24V DC nominal) 24 W max. (1.0A @ 24V DC)

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only), IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight	2 kg (4.4 lb)
Dimensions mm in	 192 (H) x 290 (W) x 116 (D) 7.55 (H) x 11.40 (W) x 4.57 (D)
Installed Depth	99 mm (3.89 in.) 131 mm (5.14 in.) with memory card retainer 220 mm (8.65 in.) with memory card retainer and clearance to insert and remove memory card

Display	
Type	Active Matrix Thin-Film Resistor (TFT) with Cold Cathode Fluorescent (CCF) Backlight
Size	115 x 86 mm (4.54 x 3.4 in.)
Pixels	320 x 234
Touch Cells	128 (16 columns x 8 rows)
Touch Cell Size	20 x 29 pixels

Terminal Memory	
Total Application Flash Memory	240K bytes (application screens)

Environment	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-25 70 C (-13 158 F)
Relative Humidity (noncondensing)	5 95% at 0 55 C (32 131 F)
Heat Dissipation	32 Watts (107 BTU/HR) for AC or DC Power
Shock (operating/nonoperating)	15 g/30 g
Vibration (operating)	2 g up to 2,000 Hz

Character Sizes (Pixel size = 0.36 x 0.37 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
6 x 9	52	25	2.9 x 5.9
8 x 16	39	14	2.9 x 5.9
8 x 24	39	9	2.9 x 8.9
16 x 24	19	9	5.8 x 8.9
24 x 32	13	7	8.6 x 11.8
32x 40	9	5	11.5 x 14.8

PanelView 600 Color Touch Only Terminals

Electrical	
DC Power Supply Voltage Limits Power Consumption	 18 32V DC (24V DC nominal) 24 W max (1.0A @ 24V DC)

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only), IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight	1 kg (2.3 lb)
Dimensions mm in	 152 (H) x 185 (W) x 96 (D) 6.00 (H) x 7.28 (W) x 3.80 (D)
Installed Depth	79 mm (3.12 in.) 132 mm (5.21 in.) with memory card retainer 211 mm (8.30 in.) with memory card retainer and clearance to insert and remove memory card

Display	
Type	Active Matrix TFT with Cold Cathode Fluorescent (CCF) Backlight
Size	115 x 87 mm (4.54 x 3.43 in.)
Pixels	320 x 240
Touch Cells	128 (16 columns x 8 rows)
Touch Cell Size	20 x 30 pixels
Backlight	50,000 hours, 1/2 life at 25 C (77 F)

Terminal Memory	
Total Application Flash Memory	240K bytes (application screens)

Environment	
Operating Temperature	0 50 C (32 122 F)
Storage Temperature	-25 70 C (-13 158 F)
Relative Humidity (non-condensing)	5 95% at 0 40 C (32 104 F)
Heat Dissipation	17 W (577 BTU/HR)
Shock (operating/non-operating)	15 g/30 g
Vibration (operating)	2 g up to 2,000 Hz

Character Sizes (Pixel size = 0.35 x 0.35 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
6 x 9	52	25	2.1 x 3.1
8 x 16	39	14	2.8 x 5.6
8 x 24	39	9	2.8 x 8.4
16 x 24	19	9	5.6 x 8.4
24 x 32	13	7	8.4 x 11.1
32x 40	9	5	11.1 x 13.9

PanelView 900 Monochrome and Color[1] Terminals

Electrical	
AC Power - PV900M and PV900C Supply Voltage Limits Power Consumption	 85 264V AC, 47 63 Hz 110 VA maximum
DC Power - PV900M Supply Voltage Limits Power Consumption DC Power - PV900C Supply Voltage Limits Power Consumption	 18 30 V DC (24V DC nominal) 58 W max (2.5 A @ 24V DC) 18 32 V DC (24V DC nominal) 50 W max (2.1 A @ 24V DC)

(1) The PanelView 900 specifications are for reference only. PanelView 900 Terminals are n longer available. Contact your Rockwell Automation distributor for more information.

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only) IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight - PV900M Keypad Touch Screen	 3.14 kg (4.4 lb) 2.91 kg (6.4 lb)
Weight - PV900C Keypad Touch Screen	 3.18 kg (7.0 lb) 2.95 kg (6.5 lb)
Dimensions - PV900M/900C Keypad mm in	 249 (H) x 406 (W) x 112 (D) 9.80 (H) x 15.97 (W) x 4.40 (D)
Dimensions - PV900M/900C Touch Screen mm in	 249 (H) x 336 (W) x 112 (D) 9.80 (H) x 13.24 (W) x 4.40 (D)
Installed Depth - PV900M	97 mm (3.81 in.) 129 mm (5.06 in.) with memory card retainer 220 mm (8.65 in.) with memory card retainer and clearance to insert and remove memory card
Installed Depth - PV900C	99 mm (3.89 in.) 131 mm (5.14 in.) with memory card retainer 222 mm (8.73 in.) with memory card retainer and clearance to insert and remove memory card

Display	
PV900M	
Type	AC Gas Plasma
Size	210 x 131 mm (8.27 x 5.17 in.)
Pixels	640 x 400
Touch Cells	384 (24 columns x 16 rows)
Touch Cell Size	26 x 25 pixels
PV900C	
Type	Active Matrix Thin-Film Resistor (TFT) with Cold Cathode Fluorescent (CCF) Backlight
Size	171 x 130 mm (6.73 x 5.12 in.)
Pixels	640 x 480
Touch Cells	384 (24 columns x 16 rows)
Touch Cell Size	26 x 30 pixels

Terminal Memory	
PV900M (prior to Series E) Total Application Flash Memory	240K bytes (application screens)
PV900M (Series E, firmware 3.0 or later), PV900C Total Application Flash Memory	1008K bytes (application screens)

Environment	
PV900M	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-25 70 C (-13 158 F)
Relative Humidity (non-condensing)	5 85% at 0 30 C (32 86 F)
Heat Dissipation	50 Watts (165 BTU/HR) for AC Power or DC Power
Shock (operating/non-operating)	15 g/30 g
Vibration (operating)	1 g up to 2,000 Hz
PV900C	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-25 70 C (-13 158 F)
Relative Humidity (non-condensing)	5 95% at 0 55 C (32 131 F)
Heat Dissipation	39 W (133 BTU/HR)
Shock (operating/non-operating)	15 g/30 g
Vibration (operating)	1 g up to 2,000 Hz

Character Sizes PV900M (Pixel size = 0.33 x 0.33 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
8 x 16	79	24	2.6 x 5.3
8 x 24	79	16	2.6 x 7.9
16 x 24	39	16	5.3 x 7.9
24 x 32	26	12	7.9 x 10.6
32x 40	19	9	10.6 x 13.2

Character Sizes PV900C (Pixel size = 0.27 x 0.27 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
8 x 16	79	24	2.2 x 4.3
8 x 24	79	19	2.2 x 6.5
16 x 24	39	19	4.3 x 6.5
24 x 32	26	14	6.5 x 8.6
32x 40	19	11	8.6 x 10.8

PanelView 1000 Color & Grayscale

Electrical	
AC Power - PV1000G and PV1000C Supply Voltage Limits Power Consumption	 85 264V AC, 47 63 Hz 55 VA maximum
DC Power - PV1000G and PV1000C Supply Voltage Limits Power Consumption	 18 32 V DC (24V DC nominal) 24 W max (1.0A @ 24V DC)

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only) IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight - PV1000G and PV1000C Keypad Touch	 3.06 kg (6.7 lb) 3.00 kg (6.6 lb)
Dimensions-PV1000G/1000C Keypad mm in	 282 (H) x 423 (W) x 112 (D) 11.11 (H) x 16.64 (W) x 4.40 (D)
Dimensions - PV1000G/1000C Touch Screen mm in	 282 (H) x 370 (W) x 112 (D) 11.11 (H) x 14.58 (W) x 4.40 (D)
Installed Depth - PV1000G and PV1000C	97 mm (3.81 in.) 129 mm (5.06 in.) with memory card retainer 220 mm (8.65 in.) with memory card retainer and clearance to insert and remove memory card

Terminal Memory	
Total Application Flash Memory	1008K bytes (application screens)

Display	
PV1000G	
Type	Active Matrix Thin-Film Resistor (TFT) with Cold Cathode Fluorescent (CCF) Backlight (4 shades of gray)
Size	211 x 158 mm (8.3 x 6.2 in.)
Pixels	640 x 480
Touch Cells	384 (24 columns x 16 rows)
Touch Cell Size	26 x 30 pixels
PV1000C	
Type	Active Matrix Thin-Film Resistor (TFT) with Cold Cathode Fluorescent (CCF) Backlight
Size	211 x 158 mm (8.3 x 6.2 in.)

Display	
Pixels	640 x 480
Touch Cells	384 (24 columns x 16 rows)
Touch Cell Size	26 x 30 pixels

Environment	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-25 70 C (-13 158 F)
Relative Humidity (non-condensing)	5 95% at 0 55 C (32 131 F)
Heat Dissipation	39 W (132 BTU/HR) for Grayscale and Color
Shock (operating/non-operating)	15 g/30 g
Vibration (operating)	2 g up to 2,000 Hz

Character Sizes PV1000G and 1000C (Pixel size = 0.33 x 0.33 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
8 x 16	79	24	2.2 x 5.3
8 x 24	79	19	2.6 x 7.9
16 x 24	39	19	5.3 x 7.9
24 x 32	26	14	7.9 x 10.6
32x 40	19	11	10.6 x 13.2

PanelView 1400 Color

Electrical	
AC Power Supply Voltage Limits Power Consumption	 85 264V AC, 43 63 Hz 200 VA maximum

Mechanical	
Enclosure	NEMA Type 12/13, 4X (Indoor use only) IP54, IP65
Status Indicators COMM Fault	 Green Red
Weight Keypad Touch Screen	 20.3 kg (44.75 lbs) 19.6 kg (43.2 lbs)

Mechanical	
Dimensions - PV1400 Keypad mm inches	 355 (H) x 483 (W) x 394 (D) 13.97 (H) x 19.0 (W) x 15.53 (D)
Dimensions - PV1400 Touch Screen mm in	 355 (H) x 441 (W) x 394 (D) 13.97 (H) x 17.37 (W) x 15.53 (D)
Installed Depth	370 mm (14.58 in.) 400 mm (15.75 in.) with clearance to insert and remove memory card

Terminal Memory	
Total Application Flash Memory	1008K bytes (application screens)

Display	
Type	Color CRT
Size	255 x 191 mm (10.0 x 7.5 in.)
Pixels	800 x 600
Touch Cells	384 (24 columns x 16 rows)
Touch Cell Size	33 x 37 pixels

Environment	
Operating Temperature	0 55 C (32 131 F)
Storage Temperature	-40 85 C (-40 185 F)
Relative Humidity (non-condensing)	5 95% at 0 55 C (32 131 F)
Heat Dissipation	78 W (264 BTU/HR)
Shock (operating/non-operating)	15 g/30 g
Vibration (operating)	1 g up to 2,000 Hz

Character Sizes PV1400 (Pixel size = 0.32 x 0.32 mm)

Size in Pixels width x height)	Characters/Row	Maximum Rows	Dimensions in mm Width x Height
8 x 20	99	29	2.5 x 6.4
16 x 24	49	24	5.1 x 7.6
24 x 32	33	18	7.6 x 10.2
32 x 40	24	14	10.2 x 12.7
32 x 64	24	9	10.2 x 20.4

Communication

DH-485 Network Communication Rate Distance Maximum	 1200, 2400, 9600, 19.2K 1219 m (4,000 ft)
DH+ Network Communication Rate Distance Maximum	 57.6K, 115.2K, 230.4K 3048 m (10,000 ft)
RS-232 or DH-485 Point-to-Point Communication Rates Distance Maximum	 1200, 2400, 9600, 19.2K 6.1 m (20 ft)
Remote I/O Communication Rates	 57.6K, 2,800 m (10,000 ft) 115.2K, 1,400 m (5,000 ft)
DeviceNet Communication Rates	 125K, 250K, 500K
ControlNet Network Communication Rate Distance Maximum	 5M 1,000 m (3,280 ft)
EtherNet/IP Network Distance Maximum	 100 meters (328 feet)
DF1/Full Duplex Communication Communication Rate Distance Maximum	 1200, 2400, 4800, 9600, 19.2K 15.24 m (50 ft)
RS-232 Printer Port Communication Rates Parity Data Bits Stop Bits Handshaking	 1200, 2400, 9600, 19.2K None, Even, Odd 7 or 8 1 or 2 None, Software (XON, XOFF), Hardware

Agency Certifications

	300 Micro	300	550	600	900M	900C	1000G	1000C	1400
Emissions (Class A: Industrial) EN50081-2:1993	x	x	x	x	x	x	x	x	x
Immunity (Industrial) EN61000-6-2:1999	x	x(1)	x(1)	x(1)	x(1)	x(1)	x(1)	x(1)	x(1)
Immunity (Industrial) EN50082-2:1995(2)		x	x	x	x	x	x	x	x
Programmable Controllers Equipment Requirements and Tests) EN61131 2:1995		x	x	x	x	x	x	x	x
Low Voltage Directive (Safety Sections of EN61131-2)			x	x(3)	x	x	x	x	x
UL508	x	x	x	x	x	x	x	x	x
UL1604 Class 1, Div 2, Groups A, B, C, D, T4	x	x	x (4)(5)	x	x	x	x	x	
UL2279 (IEC79-15) Class 1, Zone 2, Groups IIC, T4				x			x	x	
CSA 22.2, No. 142	x	x	x	x	x	x	x	x	x
CSA 22.2, No. 213 Class 1, Div 2, Groups A, B, C, D, T4	x	x	x(4)(5)	x	x	x	x	x	
EU Batteries Directive, 2006/66/EC	x	x	x	x	x	x	x	x	x

(1) Meets standard as of April 2002.

(2) This standard applies to products manufactured prior to April 2002.

(3) Does not apply to 600 Touch Screen Only terminals

(4) PV550 (Series H or later) or PV550 Touch Screen Only (Series B or later)

(5) PV550 terminals (Series G or earlier) and PV550 Touch Screen (Series A) have a Temperature Code Rating of T2

Messages, Codes and Self-test Numbers

This appendix lists:

- terminal messages and codes that may appear during terminal operation.
- description of self-test numbers.

Types of Terminal Messages

The terminals have different messages to display.

Status Messages

Indicate the terminal is performing an operation that may limit access to the terminal, such as an application download or a communication problem. The message disappears when the terminal completes the operation or when the condition is satisfied.

Reminder Messages

Indicate a minor fault or mistake. Reminder messages appear when an invalid operation is attempted, such as entering an out-of-range value. Pressing any key removes the message.

Warning Messages

Indicate the operation may produce undesirable results. You must respond to warning messages as indicated in the message.

Fault Messages

Indicate the terminal has detected a condition which prevents further operation. The current application will halt. The terminal must be reset (power cycled) to recover from this type of error.

General Terminal Messages

Error Number	Terminal Messages	Type	Meaning	Recommended Action
200-206, 300, 318-321, 328, 329, 331, 346, 347, 355, 356, 358, 367, 404, 411, 416, 417, 421-425, 447-449, 457, 459, 700, 1105, 1111, 1113, 1115, 1207-1211, 2002-2009, 2016, 2018, 2021, 2028 and 2029	A fault has occurred. Error = X	Minor Fault or Terminal Fault	A minor fault was detected that could impact terminal operation or a terminal fault was detected.	Press any key to recover from a minor fault. For terminal faults, contact technical support with the error code.
208	Write to logic controller failed	Comm Status	Controller does not accept data from the terminal. Controller is not connected.	Check connections (on remote I/O units). Verify that controller is in run mode and not busy. Verify that controller data files are not in use by other applications.
303	Aborted.	Reminder/File Transfer Status	The terminal received an abort command during a file transfer.	Try again.
304	File read access error	Reminder	Error reading the source file from a source device.	Try again. If problem continues, contact technical support.
305	File write access error	Reminder	Error writing source file.	Try again. If problem continues, contact technical support.
307	File not supported	Reminder/File Transfer Status	File is incompatible with the terminal's firmware.	Contact technical support to verify compatibility. File must be a .PVA file.
308	Timeout	Reminder / File Transfer Status	The terminal was waiting for the partner device in a file transfer, but the terminal timed out before the data or expected reply was received.	Check cable connections or data corruption with noise on cable. Verify that the computer was not reset. Try again.
309-311	Data corrupted. Verify file and retry.	Reminder/File Transfer Status	The data checksum failed in a file transfer.	Check electrical and cable connections. Try the file transfer again.
312	Unknown device	Reminder / File Transfer Status	Verify the file type entered. Try again.	Destination or source device is invalid for a read or write application transfer.
313	File too large	Reminder / File Transfer Status	Reduce application size. See Appendix A for terminal requirements. If copying to a card, check card space.	File too large to be transferred to the terminal. In a memory card transfer, the card does not have enough space.
314	No Card Inserted	Reminder	Install a memory card and try again.	You tried to transfer data to/from a memory card but there is no card in the card slot.

Error Number	Terminal Messages	Type	Meaning	Recommended Action
315	Unformatted card	Reminder	Memory card is unformatted, contains an unrecognizable format or is corrupt.	Reformat the card or replace it with a new card if corrupt. Try again.
316	Write Protected Card	Reminder / File Transfer Status	A write command to the card failed because the card switch is in the protected mode.	Select write mode by changing the switch on the top edge of the card. Try again.
317	File exists. Cannot overwrite	Reminder/File Transfer Status	See message 342. This message only occurs when the file cannot be renamed.	Change the file name or save to a new memory card.
323	No application on PV terminal	Reminder/File Transfer Status	You tried to load an application on a memory card but there is no application in the terminal.	View the Terminal Info screen to see if an application is loaded in the terminal.
324	Check card status	Reminder/File Transfer Status	Problem formatting the memory card.	Try a new memory card.
325	Unformatted card	Reminder	Memory card is unformatted, contains an unrecognizable format or is corrupt.	Reformat the card or replace it with a new card. Try again.
326	No Card Inserted	Reminder	You tried to transfer data to/from a memory card but there is no card in the card slot.	Install a memory card and try again.
327	No files	Reminder	You tried to transfer a file from the memory card but there are no files on the card.	Use memory card containing application (.PVA) files.
330	Write Protected Card	Reminder / File Transfer Status	A write command to the card failed because the card switch is in protected mode.	Select write mode by changing the switch on the top edge of the card. Try again.
332	No application on PV terminal	Reminder/File Transfer Status	You tried to load an application on a memory card but there is no application in the terminal.	View the Terminal Info screen to see if an application is loaded in the terminal.
333	File in use - Request denied	Reminder	Attempt to format memory card containing a file used by the application. This usually occurs when an application requires a font file on the memory card.	Format the memory card on a computer or a PanelView terminal that does not have an application loaded.
334	Unexpected card removal. Please disconnect card before removal.	Reminder / File Transfer Status	You removed the memory card during normal operation and did not press the Disconnect button on the Memory Card configuration screen.	Press the Disconnect Card button to close the files on the card. When prompted, remove the card from the slot and then re-insert the card. Enter Configuration Mode and press the Run Mode button.
340	Format erases entire card: 0 or F1 Abort 1 or F2 - Continue	Warning	Operator pressed [F4] Erase / Format Card on the Memory Card configuration screen.	Enter appropriate response: 0 or F1 to abort 1 or F2 to continue

Error Number	Terminal Messages	Type	Meaning	Recommended Action
341	Proceed with download? 0 or F1 -Abort 1 or F2 - Continue	Warning	You pressed [F2], Restore From Card on the Memory Card configuration screen.	Enter appropriate response: 0 or F1 to abort 1 or F2 to continue
342	The PVA file exists. 0 or F1 -Abort 1 or F2 - Upload with new PVA filename	Reminder / File Transfer Status	You pressed [F3], Save To Card on the Memory Card configuration screen when the file exists on the card.	Enter appropriate response: 0 or F1 to abort 1 or F2 to upload new PVA file.
361	Value not in range	Reminder	Entered value is outside of valid range.	Enter a value within the valid range.
364	Closing Files...	Status	Terminal is preparing for removal of memory card.	Wait for files to close before removing memory card.
365	Remove card...	Reminder	You must remove the memory card for the terminal to continues operation.	Remove the memory card.
366	Card disconnection will require card removal to continue operation.	Warning	Attempt to disconnect the memory card.	After memory card is disconnected it must be removed from card slot before the terminal will operate.
392	File not supported	Reminder/File Transfer Status	File is incompatible with the terminal type.	In PanelBuilder32, select the Setup tab on the Application Settings dialog and select the correct terminal type.
393	File not supported	Reminder/File Transfer Status	File is incompatible with the communication protocol of the terminal.	In PanelBuilder32, select the Setup tab on the Application Settings dialog and make sure the protocol matches your terminal.
394	File not supported	Reminder/File Transfer Status	File is incompatible with the terminal's firmware.	In PanelBuilder32, click the Catalog & Revisions button on the Setup tab on the Application Settings dialog. Select a firmware version that matches your terminal.
395	File not supported	Reminder/File Transfer Status	File is incompatible with the operator input type (keypad, touch or keypad and touch) of terminal.	In PanelBuilder32, select the Setup tab on the Application Settings dialog. Select the type of operator input that matches your terminal.
396	File not supported	Reminder/File Transfer Status	File is incompatible with the terminal.	Download the file to the terminal again. If problem reoccurs, contact technical support.
415	Retained memory lost. Presets were loaded.	Reminder	The battery backed memory was invalid during startup. The system defaulted to preset values instead of the last states.	No action necessary. Terminal reverts to defaults.

Error Number	Terminal Messages	Type	Meaning	Recommended Action
436	Logic Controller has screen control	Reminder	You tried to change the application screen but it is configured for controller only access.	No action required, controller will change screens as programmed.
634	Read Fail or Write Fail	Status	ControlLogix Tag or address does not exist or is the wrong data type. Designated slot does not contain a ControlLogix Processor.	Check tag address. Check for data type mismatch. Verify ControlLogix slot location.
1109	Font file unavailable, Font error = ****	Minor Fault or Terminal Fault	You downloaded an application to the PanelView without the appropriate memory card (containing the font file) inserted in the card slot of the terminal.	From the Memory Card screen, press the Disconnect button to close the files on the card. Remove the card from the card slot. Locate the card containing the font file or copy the correct font file to a card. Insert the correct memory card in the card slot and enter Run mode.
1110	No valid application	Reminder	You tried to run an application that has not been downloaded to the terminal.	Download application to terminal.
1118	Access denied.	Status	Wrong password entered.	Enter a valid password.
1119	Access denied.	Status	Password not recognized	Enter a valid password.
1120	Security tampering.	Status	PVA file was corrupted - attempt to bypass security was detected	New application file must be downloaded to the terminal.
1121	No operator selected.	Status	There is no currently selected operator, but a password change has been requested	Select the operator requiring the new password.
1122	Password change is not allowed.	Reminder	Password is unchangeable	Password cannot be changed at the current level of security.
1123	Password change is not allowed.	Reminder	Operator cannot change password	Current operator does not have access for password changes.
1124	New password must be entered before it can be verified.	Reminder	New pass words must be entered twice.	Enter the new password again to verify that it was entered correctly.
1125	New and verify passwords differ.	Status	The same password was not entered for verification.	Enter the same password for New and Verify.
1126	Please verify new password.	Reminder	New pass words must be entered twice.	Enter the new password again.
1127	Password changed	Reminder	Password change is effective.	You must use new password for security access.
2005	Application file: Insufficient RAM	Terminal Fault	Application file may be too large.	Try again. If possible, reduce the size of the application.
2007 - 2010	Application file contains errors	Terminal Fault	Application contains incompatible data.	Check application and try again.

Error Number	Terminal Messages	Type	Meaning	Recommended Action
2011	Retained memory lost. Presets were loaded.	Reminder	The battery backed memory was invalid during startup. The system defaulted to preset values instead of the last states.	No action necessary. Terminal reverts to defaults.
2012	Application file: Too many retained memory devices	Terminal Fault	The battery-backed RAM is too full to hold all devices requiring presets.	Reduce the number of control objects. Use global objects.
2014	Hardware configuration is corrupted	Terminal Fault	The terminal hardware configuration is corrupt.	Contact technical support.
2030, 2031	Hardware and firmware do not match	Terminal Fault	A mismatch exists between the terminal firmware and the terminal hardware.	Verify that the series and revision markings on the back of the terminal are compatible with the firmware.

DH-485 Terminal Messages

Error Number	Terminal Messages	Type	Meaning	Recommended Action
612	No active node(s) found on network	Comm Status	Tag or address does not exist or is the wrong data type.	Check tag address. Check for data type mismatch.
613	Required network node(s) not found	Comm Status	Tag or address does not exist or is the wrong data type.	Check tag address. Check for data type mismatch.
615	Duplicate node address	Comm Status	More than one node was assigned the same address.	Verify all device nodes.
616	Data errors on the link	Comm Status	Corrupt data packets were detected on DH-485 network.	Verify controller addressing and baud rate settings. Check for loose or reversed wiring.

ControlNet Terminal Messages

See Terminal Codes for messages below

Error Number	Terminal Messages	Type	Meaning	Recommended Action
634	PanelView offline	Comm Warning	PanelView is offline.	Check connections
634	Write fail.	Comm Warning	PanelView is communicating with the controller. The data table address does not exist.	Check / define data table address in the controller.
634	Write timeout.	Comm Warning	PanelView is not communicating with the logic controller.	Check connections and node configuration in the application.
634	Read fail.	Comm Warning	PanelView is communicating with the controller. The data table address does not exist.	Check/define data table address in the controller.
634	Read timeout.	Comm Warning	PanelView is not communicating with the controller.	Check/define data table address in the controller.
636	Initial write failed.	Reminder	Write to Logic Controller on Startup was configured and on powerup, the PanelView could not write initial values to a node s data table address. or Write to Logic Controller on Startup was not configured and the PanelView was unable to write a controller. Note: The error is only displayed on the first write attempt.	Check/define data table address in the controller. Check communication connections and node configuration in the application.

Remote I/O Terminal Messages

Error Number	Terminal Messages	Type	Meaning	Recommended Action
661	Timeout - No Block Transfer Writes	Comm Status	The PLC is communicating with the terminal, but the PanelView is not receiving BTW requests required by the application.	Check ladder logic for missing BTW instructions (instructions are not enabled) or addressing errors. Check for logic controller errors.
662	Timeout - No Block Transfer Reads	Comm Status	The PLC is communicating with the terminal, but the PanelView is not receiving BTR requests required by the application.	Check ladder logic for missing BTR instructions (instructions are not enabled) or addressing errors. Check for logic controller errors.
663	Timeout - No Block Transfer Requests	Comm Status	The PLC is communicating with the terminal, but the PanelView is not receiving BTR or BTW requests required by the application.	Check ladder logic for missing BTR or BTW instructions (instructions are not enabled) or addressing errors. Check for logic controller errors.
664	PLC in program mode	Comm Status	The PLC is offline (in Program Mode). The COMM Status indicator on the Configuration Mode menu is off.	Place the PLC in run mode to resume communication.
665	No PLC communication	Comm Status	The PLC is not communicating. Possible causes are disconnected cable, no power to PLC, incorrect baud rate or rack settings for PLC configuration. COMM Status indicator is off.	Check for pulled cables and PLC power. Check baud rate settings and rack configurations. Check wiring of connector. Communication resumes when problem is corrected.
666	Invalid Rack Configuration	Comm Status	No communication can occur because of an invalid rack configuration.	Correct the RIO rack configuration.
667	Remote I/O Hardware Failed	Comm Status	During startup, the terminal detected a missing, corrupt or nonfunctional remote I/O card. The terminal will run but not communicate.	Contact technical support and provide specific message.

EtherNet/IP Messages

For a description of EtherNet/IP terminal codes, see page 263.

DH+ Terminal Messages

Error Number	Terminal Messages	Type	Meaning	Recommended Action
675 or 684	Required network node(s) not found	Comm Status	The network is active, but the logic controller(s) are not located at the expected nodes.	Verify that the logic controller(s) required by the application are at the expected node addresses and that the communication parameters are set properly.
676 or 685	File access error	Comm Status	1. The terminal is trying to access one or more controller data files that are unavailable. 2. If the message is flashing, the terminal is trying to read or write data files that are unavailable.	1. The data files do not exist on the controller. Create the data files. 2. The data file is smaller than what is required. For example, the PanelView uses N7:10 but only N7:0 is defined in the controller.
677 or 686	Unstable DH+ network	Comm Status	Corrupt data packets or intermittent system configuration was detected on DH+ network.	Verify all controller addressing and baud rate settings. Check for loose or reversed wiring.
678 or 687	Duplicate node detected	Comm Status	More than one node was assigned the same address.	Verify all device nodes.
679 or 688	No active Node(s) found on network	Comm Status	No other DH+ devices can be located on the network.	Verify that PanelView terminal and logic controller(s) are correctly connected to the system. Check cable and wiring. If error continues, verify that baud rates on the terminal and controller are the same. Communication resumes when the problem is corrected.
681 or 690	DH+ hardware failed	Comm Status	During startup, the terminal detected a missing, corrupt, or nonfunctional DH+ card. The terminal will run but not communicate.	Contact technical support and provide the specific terminal message.

DF1 Terminal Messages

Error Number	Terminal Messages	Type	Meaning	Recommended Action
675 or 682	Required network node(s) not found	Comm Status	The network is active, but the logic controller(s) are not located at the expected nodes.	Verify that the logic controller(s) required by the application are at the expected node addresses and that the communication parameters are set properly.
676 or 683	File access error	Comm Status	The terminal is trying to access one or more controller data files that are unavailable. If the message is flashing, the terminal is trying to read or write data files that are unavailable.	The data files do not exist on the controller. Create the data files.
679 or 686	Panelview offline	Comm Warning	PanelView is offline.	Check connections
681 or 688	DF1 hardware failed	Comm Status	During startup the terminal detected a missing, corrupt, or nonfunctional DF1+ card. The terminal will run but not communicate.	Contact technical support and provide terminal message.

Terminal Codes

Terminal Codes are displayed on the PanelView terminal during operation or terminal configuration.

DeviceNet Codes

Comm Status codes appear as a banner at the top of an application screen or as a status indicator on the terminal's Configuration screen. Error 634 appears in upper left of banner. Codes less than 12 are minor faults and clear automatically when corrected. Codes above 12 require a terminal reset to clear.

DeviceNet Comm Status Code	Indicates	Recommended Action
1	No connections established. Occurs on power-up until a device connection is established on the network.	Establish a connection over DeviceNet to the PanelView.
2	A connection is in the timed out state. Occurs when I/O polling stops after an I/O poll connection is running.	Check that the network wiring and that the master device (scanner) is operational.
3	An peer tag cannot be obtained. Occurs if the device associated with a peer tag is not responding or the peer tag does not exist at the specified class, instance, and attribute number.	Ensure the data location is correct and that the end device is attached and operational. For write tags, ensure that the appropriate attribute is targeted. If the targeted device is UCMM capable, ensure it has enough explicit message connections to allow the PanelView to take one. If the targeted device is not UCMM capable, ensure that it is owned by a Master device (scanner).
4	A zero length I/O message was received placing the I/O application in idle mode. Occurs when scanner is in program mode.	Error clears when switched back to run. Correct the problem of the Master sending the I/O idle condition.
5	Message Overrun. Message traffic from the PanelView is being generated quicker than it is possible to send the data. Occurs with large I/O sizes when Change-Of-State is being used and state changes are occurring very quickly or if polling too fast.	Slow down I/O polling or the state changes generating Change-of-State I/O messages. Use Cyclic I/O at a fast heartbeat rate rather than Change-of-State. Use the production inhibit capability on the master.
6	Offline Connection Set Identify Received. An Offline Connection Set Point-to-Point Identify Message has been received. Occurs if a Client device on the network capable of executing the Offline Connection Set sends a Point-to-Point Identify message to the terminal while it is in the Offline State. (It failed Duplicate MAC ID Detection on startup).	No action required. The error clears within 500 ms of the last Identify message sent.
7	A Listen Only connection has timed out. It has not received a message in at least four times the expected packet rate value. This occurs if the message associated with the Listen Only tag is not occurring or was not identified correctly.	Check that the Listen Only tags are properly configured. Verify that the associated message is occurring at the expected packet rate. DeviceNet traffic monitor may be helpful.
10	Autobaud in Progress. Occurs on startup while the Autobaud process is executing.	No action required. The error clears within 10 seconds, the maximum time allowed to detect a baud rate.
11	No network power detected. Occurs if network 24V is not present.	Check the wiring. This message will clear automatically when 24V power is restored.
12	Dup MAC Failure. Occurs if the PanelView powers up with the same Node Address present on the network.	Change the node address to an unused address and reset the terminal.
13	Bus-off Interrupt occurred. CAN Chip is held in reset. Caused by noise on network signal lines or an attempt to connect to the network at the wrong baud rate.	Check baud rate and network wiring, including termination resistors. Reset the terminal.

Alert codes appear as a box in the middle of the screen. Error 636 appears in the upper left corner. Operation of the terminal continues. Alert messages can be cleared.

DeviceNet Alert Codes	Indicates	Recommended Action
2	Unsupported DeviceNet Message received. The Network Access Object received a message that is not supported.	Should not occur in normal operation. Clear the message. If problem re-occurs, contact technical support.
3	Initial Writes Failure. The Motherboard failed to send all input data to the daughter card prior to network startup.	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
4	Invalid Peer Address. Occurs at runtime if the node address of a peer tag is the same as the PanelView.	Clear the message and determine which tag in the application is pointing to the PanelView's node address. Correct the application and or the Indirect Address tag, if used.
7	Change-Of-State Input Overrun. Occurs if PanelView state changes on I/O input data occurs faster than the PanelView can send them to the I/O scanner.	Clear the message. Excessive network traffic could cause this problem if inputs are changing rapidly.
8	An external network process has caused the reset of the network access process. Connections are temporarily lost. Occurs if an external device sends an Identify Object Reset Service to the terminal or if an external device changes the terminal's node address (directly or using the Offline Connection Set).	No action required. Any server connections will need to be re-established.
10	Unsupported DeviceNet message received.	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
12	Invalid ASA Number (0x00000000 or 0xFFFFFFFF). Occurs if the flash memory is corrupt or an invalid ASA number was programmed.	Clear the message. The message occurs each time the terminal is reset. The terminal operates normally but you should correct the problem. Contact technical support.
14	Get Next Scan Item Failed in peer mode.	Should not occur in normal operation. Clear the message. If problem reoccurs, contact technical support.
15	Peer Input Data not received. Will occur if an input (push button) changes a second time before its previous state was sent on the network. Only for Peer tags.	Clear the message. Excessive network traffic could cause this problem if inputs are changing rapidly. Handle high speed input data over I/O connections if possible.
16	I/O Connection Size does not match size of the data in I/O Assembly Instances (typically Instances 1 and 2). Programmed connection sizes for I/O do not match the amount of data represented by the I/O type tags.	Clear the message and if the problem reoccurs, consult technical support.
19	Get Next Context Request Failure. In Peer Mode scanning, the request to obtain the next tag in current context failed.	Should not occur in normal operation. Clear the message. If problem reoccurs, contact technical support.

DeviceNet Alert Codes	Indicates	Recommended Action
20	Autobaud Failure. The autobaud process failed to detect a valid baud rate within 10 seconds. Occurs if network traffic is nonexistent or intermittent.	Start the terminal when network traffic exists or use a fixed baud rate.
23	Nonvolatile Objects have been reset. Nonvolatile storage of some objects required a full reset on powerup. Certain nonvolatile values will be reset to defaults.	Can occur when the daughtercard firmware in the terminal is upgraded. Clear the message and continue. If problem reoccurs, contact technical support.
38	An external client device on the network has performed a Set Attribute request on the Baud Rate setting. The baud may be different on next terminal reset.	Confirm the Active Baud on the Communication Setup screen of the terminal.

Fault codes appear as a full screen box with Error 635 appears in the upper left corner. Reset the terminal to clear the condition. If the problem reoccurs, note the 2-digit code and contact technical support.

DeviceNet Fault Codes	Indicates	Recommended Action
5	PCCC Message Transaction error during the transfer	Should not occur in normal operation. Clear the message. If problem re-occurs, contact technical support.
6	Stack overflow fault	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
13	Invalid Screen Context Priority Received	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
17	Client Object Failed	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
18	CAN Chip Failed to initialize	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
33	I/O Assembly Remap Error	Revalidate the application and download. If problem re-occurs, contact technical support.
37	The size of a particular channel exceeds the size limitation set by the daughtercard.	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
39	The application contains more Listen Only channels that the daughtercard supports.	Reset the terminal. If problem re-occurs, contact technical support.
20xx	Critical Internal DeviceNet firmware fault	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.
9, 11, 21, 22, 24-32, 34-36	Internal faults associated with motherboard/daughtercard communication	Should not occur during normal operation. Clear the message. If problem reoccurs, contact technical support.

General Codes

General Terminal Alert Code	Alert Type	Indicates	Recommended Action
603	Critical fault	File download error	Reset the terminal. If problem occurs again, contact technical support.
9020	Critical fault	An internal fault occurred.	Reset the terminal. If problem occurs again, contact technical support.

ControlNet Codes

These errors appear at the top of the application screen or on the terminal's configuration screen. If you should get an alert number that is not listed, contact technical support.

ControlNet Error Codes	Error Type	Indicates	Recommended Action
1803	Informational	The communication device has completed the request to force the device into the listen-only state.	The PanelView was detected as having a duplicate node address and is in the listen-only mode. Check the node address (MAC ID) of the devices on the network to verify that addresses are not duplicated.
1824	Warning	The PanelView was forced to a listen-only state.	Contact technical support.
1826	Warning	A fixed tag packet was received but there is no place to route the packet. The data packet is discarded and the error message is displayed.	Contact technical support.
1828	Warning	An attempt was made to open an unsupported transport class.	Contact technical support.
1829	Warning	An attempt was made to open a Class 1 transport with application triggering or a Class 3 transport with cyclic triggering.	Contact technical support.
3333	Warning	A connection has timed out.	A file transfer was unexpectedly interrupted. Try to transfer again.

These messages appear on the terminal screen as DC Error=xx. If you get an alert number that is not listed here, contact technical support.

ControlNet Alert Codes	Alert Type	Indicates:	Recommended Action
9000	Critical fault	Interface startup failed.	Contact technical support.
9003	Critical fault	CIP S/N is not valid.	Contact technical support.
9004	Critical fault	Out of buffers.	Contact technical support.
9010	Critical fault	Invalid target node, target node is the same as the PanelView, or larger than the UMAX.	Check node address of all devices on the network including the PanelView terminal.
9012	Communication Warning	ControlNet object received a reset request.	Contact technical support.
9014	Critical fault	A fatal CPU fault occurred.	Contact technical support.
9015	Critical fault	A ControlNet hardware fault occurred.	Contact technical support.
9016	Critical fault	RAM verification failed at startup.	Contact technical support.
9017	Critical fault	CRC verification failed at startup.	Contact technical support.
9018	Critical fault	A critical internal error occurred.	Contact technical support.
9019	Critical fault	An internal fault occurred.	Reset terminal, if problem occurs again, contact technical support.
9020	Critical fault	An internal fault occurred.	Reset terminal. If problem occurs again, reload application. If problem persists, contact technical support.

EtherNet/IP Codes

These messages appear on the terminal screen as DC Error=xx. If you get an alert number that is not listed here, contact technical support.

Error Number	Terminal Messages	Type	Meaning	Recommended Action
xx,xx,xx Number depends on hardware fault detected.	Communication Interface Fault	Critical Fault	A hardware problem was detected during power-up. If you ignore message and display the EtherNet/IP Communication Screen, the Comm Status displays Comms hardware fault: without an error number. The FW revision, serial number and EtherNet/IP address fields are displayed.	Contact technical support to have unit repaired.
770	Buffer overflow	Comm Status	Internal error occurred.	Contact technical support.
771	Buffer underflow	Comm Status	Internal error occurred.	Contact technical support.
1799	Heap partition empty	Comm Status	Internal error occurred.	Contact technical support.
16387	Comms not started yet...	Comm Status	The PanelView has not connected to the network.	Check IP configuration (on the Communication Setup screen) and wait for PanelView to connect to the network.
16388	CIP S/N is not valid	Critical fault.	DC incorrectly configured.	Contact technical support.
16389	Out of buffers	Critical fault.	No buffers are available for read or write operations.	Contact technical support.
16390	An initial write failed	Comm Warning	Write to Logic Controller on Startup was configured and on powerup, the PanelView could not write initial values to a node s data table address. or Write to Logic Controller on Startup was not configured and the PanelView was unable to write a controller. Note: The error is only displayed on the first write attempt.	Check/define data table address in the controller. Check communication connections and node configuration in the application.
16391	PV write failed	Comm Warning	PanelView is communicating with the controller. The data table address does not exist.	Check/define data table address in the controller.
16392	PV write timeout	Comm Warning	PanelView is not communicating with the logic controller.	Check connections and node configuration in the application.
16393	PV read fail	Comm Warning	PanelView is communicating with the controller. The data table address does not exist.	Check/define data table address in the controller.
16394	PV read timeout	Comm Warning	PanelView is not communicating with the controller.	Check/define data table address in the controller.
16397	CN object received a reset request	Comm Warning	An Ethernet object received a reset request from a device on the network.	The PanelView does not support network resets.

Error Number	Terminal Messages	Type	Meaning	Recommended Action
16398	The Connection Originator is indicating it is in Program Mode	Comm Warning	The logic controller is offline (in Program Mode). The COMM Status indicator on the Configuration Mode menu is off.	Place the logic controller in run mode to resume communication.
16399	A fatal CPU fault occurred	Critical Fault	A fatal CPU fault occurred.	Contact technical support.
16401	The RAM check failed	Critical Fault	RAM verification failed at startup.	Contact technical support.
16402	The CRC check of the firmware failed	Critical Fault	CRC verification failed at startup.	Contact technical support.
16403	OS startup failed	Critical Fault	Operating system failed to start.	Contact technical support.
16404	PV Client Task Fault	Critical Fault	Internal error has occurred.	Contact technical support.
16405	Invalid preset information received from motherboard.	Critical Fault	Internal error has occurred.	Contact technical support.
16406, 16407	Connection with Addr or scan rate invalid or no connection being attempted.	Critical Fault	Internal error has occurred.	Contact technical support.
16408	No buffers available for read operation	Critical Fault	Internal error has occurred.	Contact technical support.
16409	DC couldn't send out the write request in time.	Critical Fault	Too many write operations are occurring.	Contact technical support.
16410	Too many clients attempted to connect to server	Critical Fault	Internal error has occurred.	Contact technical support.
16411	XS-WD creation error	Critical Fault	Internal error has occurred.	Contact technical support.
16412	XS-WD start error	Critical Fault	Internal error has occurred.	Contact technical support.
16413	ENet addr is not valid	Communication Warning	The EtherNet address for a device on the EtherNet/IP network is invalid.	Contact technical support.
16414	Duplicate IP address detected	Critical Fault	The PanelView has the same IP address as another device on the EtherNet/IP network.	Change the IP address of the PanelView (on the Communication Setup screen) so that is unique on the network.
16415	Unknown error detected	Communication Warning	An operating system message has occurred.	Contact technical support.
16416	No network link	Critical Fault	Communication has not been established with network.	Check Ethernet cable.

Error Number	Terminal Messages	Type	Meaning	Recommended Action
16417	DHCP/BootP Enable failed	Communication Warning	The DHCP/BootP Enable server failed to allocate an IP address, subnet mask and gateway address to the PanelView terminal	Check DHCP/BootP Enable server on your network.
16418	Invalid IP Address or Subnet Mask	Communication Warning	The IP address or the subnet mask of the PanelView terminal is not valid. Important: The Gateway Address cannot be entered at the terminal; you must configure this address in the Communication Setup dialog of PanelBuilder32.	Enter a valid IP address and/or the subnet mask of the PanelView terminal on the Communication Setup screen. This error occurs if the downloaded application has DHCP/BootP enabled and it is then disabled at the terminal. On a restart, the terminal will not have the necessary information (IP Address, Subnet Mask, Gateway Address) to connect to the network.
16420	Invalid Gateway Address	Communication Warning	The Gateway Address is not valid.	Change the Gateway Address in the PanelBuilder32 software.

Remote I/O Communication Loss

When communication fails on a remote I/O network:

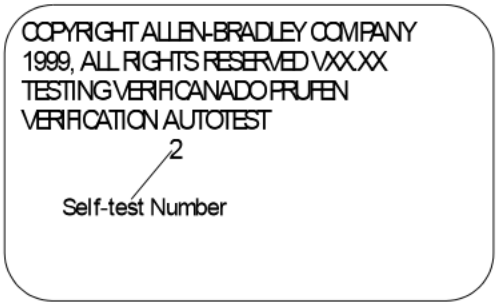
- Object states are maintained and the message No PLC Communication is displayed on the screen.
- If Block Transfers are defined for the application, but no BTR or BTW instructions are received, another message appears when the Block Transfer Timeout occurs.

These messages continue to display until communication is established. If a write operation is attempted to the logic program controlling the PanelView objects, the terminal will display the message Error: Write to Logic Controller failed.

If a PanelView object is activated during a communication loss, the object retains its new state and sends this state value to the controller when communication is established.

Self-test Numbers

The self-test numbers appear on the screen during powerup.



Test Number	Indicates
1	STATIC RAM test
2	Terminal searching for a file to download.
10	Erase boot flash area.
11	Copy boot code
12	Boot code copy successful
13	Boot code copy failed. Check for error after boot code is copied to the onboard flash EPROM.
20	Erase firmware from flash EPROM
21	Copy firmware to firmware flash memory
22	Firmware copy successful
23	Firmware copy failed
24	Performed CRC base firmware check

Test Number	Indicates
25	Firmware not compatible with boot code
26	Firmware not compatible with hardware
30	Watchdog test
31	Stuck key test
32	Real time clock test
33	LCD RAM failed
34	Performed CRC extended firmware check

TIP You may not see all of these test numbers during a powerup.

If a test fails, the terminal displays:

ERROR! FEHLER! ERREUR! ERRORE!

The following test numbers appear only if a problem occurs.

Test Number	Indicates
40	No executable code to run after boot
50	Wrong memory card format
60	CPU could not execute code

The table below shows fault conditions that may occur during powerup.

Fault Indicator	Indicates
Solid Red	Static RAM Test failed. Contact technical support.
Blinking Red (6 times per second)	Checksum test on boot code failed. Contact technical support.
Blinking Red (5 seconds on/5 seconds off)	Boot code is incorrect for terminal type (touch screen or keypad). Contact technical support.

European Union Directive Compliance

If the PanelView Operator Terminals are installed within the European Union or EEA regions and have the CE mark, the following regulations apply.

EMC and Low Voltage Directives

These apparatuses are tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC), and amending directives 92/31/EEC, 93/68/EEC; 73/23/EEC Low Voltage Directive, and amending directive 93/68/EEC using the following standards, in whole or in part:

	300 Micro	300	550	600	900M	900C	1000G	1000C	1400
Emissions (Class A: Industrial) EN50081-2:1993	x	x	x	x	x	x	x	x	x
Immunity (Industrial) EN61000-6-2:1999	x	x(1)	x(1)	x(1)	x(1)	x(1)	x(1)	x(1)	x(1)
Immunity (Industrial) EN50082-2:1995(2)		x	x	x	x	x	x	x	x
Programmable Controllers Equipment Requirements and Tests) EN61131 2:1995		x	x	x	x	x	x	x	x
Low Voltage Directive (Safety Sections of EN61131-2)			x	x	x	x	x	x	x

(1) Meets standard as of April 2002.

(2) This standard applies to products manufactured prior to April 2002.

Intended Use of Product

According to these Standards, the factor which determines, for EMC purposes, whether a product is deemed to be Industrial rather than Residential, commercial or light industrial, is given in clause 1 of EN50081-2 as follows:

> Apparatus covered by this standard is not intended for connection to a public mains network supplied from a high- or medium-voltage transformer dedicated for the supply of an installation feeding a manufacturing or similar plant.

When installed in Europe, any other application is in contravention of European Union Directives, and a breach of these laws.

The PanelView 900 color, the 1000 grayscale and the 1400 terminals are certified for direct connection to a low-voltage public mains supply or to a dedicated source, which is intended to interface to a low-voltage public mains supply.

Wiring Recommendations

To reduce electrical noise, connect the PanelView terminal to its own branch circuit. The input power source should be protected by a fuse or circuit breaker rated no more than 15 amps. Route incoming power to the PanelView terminal by a separate path from the communication cable.

Where power and communication lines must cross, they should cross at right angles. Communication lines can be installed in the same conduit as low-level dc I/O lines (less than 10 Volts).

Declarations of Conformity

Declarations of Conformity are available for each of the PanelView terminals at the website http://www.ab.com/support under Product Certification.

Battery Replacement and Disposal

The terminal contains a lithium battery, which is intended to be replaced during the life of the product.

At the end of its life, the used battery should be collected separately from any unsorted municipal waste and recycled.

The Micro 300 terminal contains a lithium battery, which is permanently connected and should only be removed or replaced by trained professionals.

Please refer to the terminal installation instructions for procedures to remove the terminal battery.

PanelView Terminal	Publication
PanelView 300 Micro	2711-IN008
PanelView 300 Keypad	2711-IN027
PanelView 550	2711-IN009
PanelView 550/600 Touch	2711-IN034
PanelView 600	2711-IN010
PanelView 1000	2711-IN036

adapter

ControlNet device that responds to scanner messages (also called slave device).

address

1) A character string that uniquely identifies a memory location. 2) A character string that uniquely identifies the physical location of an input or output circuit.

application

In the context of PanelBuilder32 software, an application is a logical arrangement of screens that replace the functions of a control panel and consist of push buttons, data entry objects, control lists, and indicators. The application runs in a PanelView terminal.

application file

File containing configuration information for a PanelView terminal. Files exist in either a PanelView (.PVA) or a PanelBuilder32 (.PBA) format. Files transferred to a terminal are in a .PVA format. Files within PanelBuilder32 software are in a .PBA format.

ATA card

Advanced Technology Attachment (ATA), Intelligent Drive Electronics (IDE), PC cards (formerly PCMCIA) combine the drive controller and memory storage device. ATA cards can be accessed with standard Copy or Delete commands on a computer. The card looks like a hard drive. You can use the card on a variety of computers without any special setup.

baud

A unit of signaling speed equal to the number of discrete conditions or signal events per second. Where one bit is encoded on each signalling event, the number of baud is the same as the number of bit/s.

boot revision

Revision number of the terminal boot code.

bridge

Device that lets network data pass from one link to another link.

controller

A unit, such as a programmable controller or relay panel, that controls machine or process elements.

cursor keys

Up, down, left, right arrows on the terminal keypad. These keys are used to move a selection cursor or the active object indicator bar.

DF1

Allen-Bradley communication protocol based on an ANSI X3.28-1976 specification.

download

See upload/download.

DH-485 link

Data Highway 485 link. An Allen-Bradley token-passing carrier-band link for a local area network.

DH+ link

Data Highway Plus link. An Allen-Bradley token-passing baseband link for a local area network.

DHCP

Dynamic Host Configuration Protocol (DHCP) software allows for dynamic allocation of addressing information for new attached devices on a TCP/IP network.

Domain Name

Character string mapping the local domain to the IP address of the DNS server. See DNS Server.

DNS Server

The domain name server (DNS) converts more convenient host names into IP addresses. The DNS server is identified by a 32-bit IP address.

EMI

Electromagnetic interference. Any electromagnetic disturbance that interrupts, obstructs, or otherwise impairs the performance of electronic equipment.

EPROM

Erasable programmable read-only memory. A PROM that can be erased, usually with ultraviolet light, then re-programmed with electrical signals. As with all PROMs, it is nonvolatile random-access memory.

EEPROM (flash)

Electrically-erasable programmable read-only memory. A type of PROM that can be erased and re-programmed by electrical signals. As with all PROMs, it is nonvolatile random-access memory. Used by the PanelView terminals to store applications.

firmware

Logic stored in read-only memory.

function keys

Set of keys (labeled F1-F10, F1-F16 or F1-21) on the PanelView terminals used to initiate functions. The function keys are user-defined and may have custom labels.

gateway address

A unique 32-bit address of the gateway connecting two individual IP networks into a system of networks. When a node needs to communicate with a node on another network, the gateway transfers the data between the two networks. The IP address is formatted as four sets of decimal numbers (0 255) with periods between them (130.200.25.30).

interscan delay

Determines the amount of time the PanelView terminal waits before re-reading the current screen data from the logic controller.

IP address

A unique 32-bit address of a node on the EtherNet/IP network.

keeper

The network controller of a ControlNet network.

keypad

Set of 14 keys (numeric 0-9, decimal point, backspace, minus, and enter) to the right of the display on keypad terminals. These keys are used to enter data.

LED

Light-emitting diode. See status indicator.

Memory Card

A storage medium that can store a PanelView application and/or a font file.

MicroLogix

An Allen-Bradley programmable controller.

NEMA standards

Consensus standards in the United States for electrical equipment approved by the members of the National Electrical Manufacturers Association (NEMA).

network

Collection of connected nodes including the connection paths, repeaters, and bridges.

network access point (NAP)

Port providing temporary access to a ControlNet network through the RJ-45 connector.

network update time (NUT)

The ControlNet network update time established for the communication link.

node

The connection point at which medium access is provided.

PanelBuilder32 software

A Windows program used to develop applications that run in PanelView terminals.

PanelView terminal

An Allen-Bradley keypad or touch screen terminal providing the operator interface to the logic controller when an application is executing.

PC

1) Personal Computer. 2) Programmable Controller. 3) Printed Circuit.

PCCC

Acronym for Programmable Controller Communication Commands.

PGM (Program)

PGM setting means the baud rate is set via an explicit message request over the network by another device (typically a configuration tool, such as a PC or DeviceView). This baud rate setting is retained by the daughtercard when the power is cycled on the PanelView terminal.

PLC controller

1) An Allen-Bradley programmable controller with a name that has the prefix PLC. See programmable controller.

preset value

A value loaded into a controller data table when an application is first started.

programmable controller

A solid-state control system that has a user-programmable memory for storage of instructions to implement specific functions such as I/O control, logic, timing, counting, report generation, communication, arithmetic, and data file manipulation. A controller consists of a central processor, input/output interface, and memory. A controller is designed as an industrial control system.

real time clock

Internal clock that provides time, day, month and year.

remote I/O

1) I/O connected to a processor across a serial link. With a serial link, remote I/O can be located long distances from the processor.

remote I/O link

A serial link for carrying I/O data between a PLC or SLC processor/scanner and remote I/O adapters.

repeater

Two-port component that receives and transmits all data from one segment to another.

restore

To load an application from a memory (PC) card.

RS-232

An EIA standard that specifies electrical, mechanical, and functional characteristics for serial binary communication circuits in a point-to-point link.

RS-485

An EIA standard that specifies electrical characteristics of balanced-voltage digital interface circuits in a multi-point link.

scheduled messages

Messages that occur at a regular specified interval. They are assigned a particular portion of the network update time (NUT) and are always transmitted at that time.

safety extra-low voltage (SELV)

A voltage that, under all operating conditions does not exceed 42.4 V peak or dc between conductors, or between any conductor and earth, in a circuit that is isolated from the main power supply by means of a safety isolating transformer or an equivalent means. National regulations have to be considered for a correct isolation voltage rating.

scratchpad

A window that appears in the center of the terminal display that allows data entry by using the terminal or screen keypad.

screen

1) the viewing surface on which data is displayed. 2) The visual image on a screen.

segment

Trunk-cable sections connected through taps with terminators at each end and no repeaters.

SLC

An Allen-Bradley programmable controller with a name that has the prefix SLC.

SMAX

Highest ControlNet node address that can communicate during the scheduled portion of the network update interval.

status indicator

An LED that indicates Comm or Fault status.

subnet mask

A 32-bit value forming the PanelView terminal's subnet mask. This parameter interprets IP addresses when the EtherNet/IP network is divided into multiple networks. The IP address is formatted as four sets of decimal numbers (0 255) with periods between them (130.200.25.30).

tap

Hardware component that connects devices to the ControlNet trunk cable.

touch cell

1 of 128 or 384 rectangular areas on the terminal display that can sense when touched.

touch screen

The display window of the terminal that responds when touched.

trunk cable

Bus or central part of a cable system.

unscheduled messages

Messages that are sent on an as needed basis. Unscheduled messages are sent during the unscheduled portion of the network update interval.

UMAX

Highest ControlNet node address that can communicate during the unscheduled portion of the network update interval.

upload/download

Commonly referred to the reading/writing across a link relatively large blocks of data from one device to another. Whether it is considered an upload or download may depend upon whether it is a read or write and upon which device initiates the transaction. When data is transferred to a programming device, it is considered an upload. When data is transferred from a programming device, it is considered a download.

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