



# Hope Industrial Systems, Inc.

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## Data Sheet: Panel Mount Monitors and Touch Screens

NEMA 12/4/4X

12"/15"/17"/19"/19.5"/20"/22"/23"

### Features

- ▶ 12", 15", 17", 19", 19.5", 20", 22", or 23" LCD
- ▶ NEMA 4/12 or NEMA 4/4X/12, sealed to IP65/66 standards
- ▶ UL Rated for Hazardous Locations: Class I, II, III, Division 2
- ▶ High resolution, high brightness and contrast
- ▶ Touch Screen, Tempered Glass, and Acrylic Window options
- ▶ Only 1.82" to 2.12" deep
- ▶ Black carbon steel and stainless steel bezel options
- ▶ Panel mount without drilling stud holes
- ▶ 5 ft. cables included (optional to 1000 ft.)
- ▶ Industrial Certifications: UL 508A, UL 50E, FCC Class A, CE, UL 60950 3<sup>rd</sup> Edition / cUL Recognized Component

### Product Description

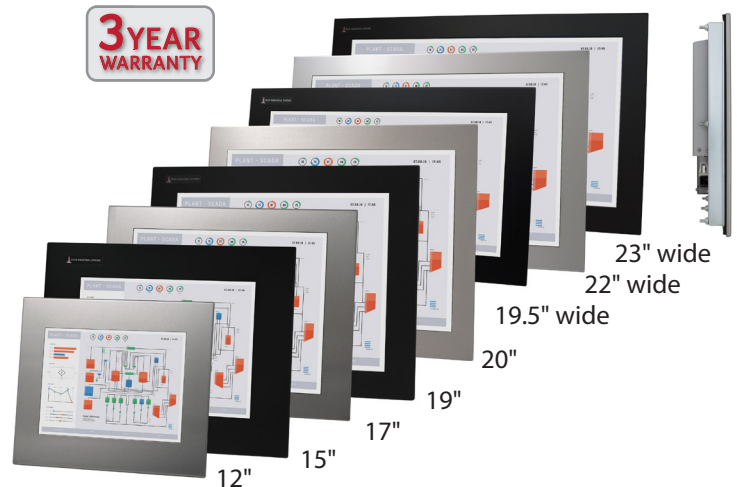
Hope Industrial Systems' Panel Mount Industrial Monitors are designed to provide the industrial user with excellent picture quality and rugged design for reliable continuous operation.

A unique single-cutout, stud-free design and depths of only 1.82" to 2.12" make them a snap to install. Options like touch screens and KVM Extenders make these displays highly versatile.

Like all our displays, these monitors are backed by industrial certifications (including 3rd-party environmental testing) and an industry-leading 3-year warranty.

### Optional Accessories

- ▶ Industrial Panel Mount Keyboards (NEMA 4X rated)
- ▶ Screen Protectors (all sizes)
- ▶ Extended cable options up to 1000'
- ▶ KVM Extenders



### About Hope Industrial Systems

Hope Industrial provides industrial flat panel monitors and touch screens that have superior quality and up-to-date features that are relevant to industrial applications.

We house this advanced technology in a variety of rugged enclosures that allow the user to put their displays wherever they are needed in the factory. We assure our customers of high reliability over time and back it up with an industry-leading warranty.

We provide all of these benefits at a price that is significantly less than comparable industrial offerings. And finally, we offer the best sales, support and service in the industry:

- ▶ 3-year limited warranty on all monitors
- ▶ 24-48-hour repair turnaround (most models)
- ▶ Same day shipment lead time (most models)
- ▶ 30-day money-back guarantee



Rear view of 19" Panel Mount Monitor.



Panel Mount workstation configuration with monitor and industrial keyboard.



Optional KVM Extender allows monitor to be placed up to 1000' away from computer.



Optional Screen Protector guards touch screens from scratches and wear.

## Panel Mount Industrial Monitors and Touch Screens: Specifications

Model No. (Revision)	HIS-ML12 (Rev. E)	HIS-ML15 (Rev. H)	HIS-ML17 (Rev. H)	HIS-ML19 (Rev. H)	HIS-ML19.5 (Rev. A)	HIS-ML20 (Rev. C)	HIS-ML22 (Rev. B)	HIS-ML23 (Rev. C)
<b>Display</b>								
Type	Thin-film transistor (TFT) Active Matrix Liquid Crystal, LED Backlit							
Size / Aspect Ratio	12.1" diagonal / 4:3	15" diagonal / 4:3	17" diagonal / 5:4	19" diagonal / 5:4	19.5" diagonal / 16:9	20.1" diagonal / 4:3	22" diagonal / 16:10	23" diagonal / 16:9
Image Size (WxH)	246 x 184.5 mm (9.7" x 7.3")	304 x 228 mm (12.0" x 9.0")	338 x 270 mm (13.3" x 10.6")	375 x 300 mm (14.8" x 11.8")	435 x 239 mm (17.1" x 9.4")	408 x 306 mm (16.1" x 12.1")	474 x 296 mm (18.7" x 11.7")	509 x 286 mm (20.1" x 11.3")
Native Resolution*	SVGA (800 x 600 @ 60Hz)	XGA (1024 x 768 @ 60Hz)	SXGA (1280 x 1024 @ 60Hz)		HD1080p (1920 x 1080 @ 60 Hz)	UXGA (1600 x 1200 @ 60Hz)	WSXGA+ (1680 x 1050 @ 60Hz)	HD1080p (1920 x 1080 @ 60Hz)
Pixel Pitch	0.308 mm x 0.308 mm	0.297 mm x 0.297 mm	0.264 mm x 0.264 mm	0.293 mm x 0.293 mm	0.2265 mm x 0.221 mm	0.255 x 0.255 mm	0.282 x 0.282 mm	0.265 x 0.265 mm
Number of Colors	16.7 million							
Brightness (white)	450 nits (cd/m <sup>2</sup> )	400 nits (cd/m <sup>2</sup> )	250 nits (cd/m <sup>2</sup> )			330 nits (cd/m <sup>2</sup> )	250 nits (cd/m <sup>2</sup> )	
Viewing Angle (Hori/Vert)	178° / 178°	170° / 170°	170° / 160°	178° / 178°		170° / 170°	170° / 160°	178° / 178°
Contrast Ratio	1500:1		1000:1	1000:1 (typ); 20M:1 (dyn)	3000:1	1400:1	1000:1 (typ); 10M:1 (dyn)	1000:1 (typ); 20M:1 (dyn)
Backlight Brightness half-life	60,000 hours			40,000 hours		50,000 hours		40,000 hours
<b>Video</b>								
Input Connectors**	HD-15, DVI-I, optional DisplayPort or BNC			HD-15, DVI-D, optional DisplayPort or BNC		HD-15, DVI-I, DisplayPort, optional BNC	HD-15, DVI-D, optional DisplayPort or BNC	HD-15, DVI-I, optional DisplayPort or BNC
Input Signal Formats***	RGB, Separate H/V sync; DVI			RGB, Separate H/V, Combined, SoG; DVI	RGB, Separate H/V sync; DVI			
Horizontal / Vertical Scan	30-60 kHz / 50-75 Hz	31-73 kHz / 50-76 Hz		24-82 kHz / 50-75 Hz		31-80 kHz / 30-85 Hz	24-82 kHz / 50-75 Hz	
Response Rate	12 ms	35 ms	5 ms	14 ms	20 ms	30 ms	5 ms	
<b>Electrical</b>								
Monitor Input	100-240 VAC, 0.4/0.2A, 60/50 Hz or 9.6-36.6 VDC, 2.5-0.65 A	100-240VAC, 0.5/0.25A, 60/50 Hz or 9.6-36.6 VDC, 2.5-0.65 A	100 to 240 VAC, 1.5/0.75 A, 60/50 Hz or 9.6 to 36.6 VDC, 2.5 to 0.65 A			100-240 VAC, 0.8/0.4A, 60/50 Hz or 24 VDC, 1.25 A (22.1-26.6 VDC)	100 to 240 VAC, 1.5/0.75 A, 60/50 Hz	100-240 VAC, 1.5/0.75A, 60/50 Hz or 9.6 to 36.6 VDC, 2.5 to 0.65 A
Power Consumption	~14.9 W	~16.8 W	~20 W	~16 W	~20 W	~34W (AC); ~30W (DC)	~26 W	~24 W
<b>Environmental</b>								
Temperature	0° to 60°C (32° to 140°F)		0° to 50°C (32° to 122°F)			AC: 0°-50°C; DC: 0°-60°C	0° to 50°C (32° to 122°F)	
Humidity	20% to 90% non-condensing							
Operating Shock / Vibration	15 g, 6 msec, half-sine / Operating (sine): 1.0 g, swept sine 9-500 Hz; Transport (random): 0.1g <sup>2</sup> /Hz, 10-200Hz; 0.03g <sup>2</sup> /Hz, 200-2000 Hz							
Altitude	Operating: up to 10,000 ft; Non-operating: up to 40,000 ft							
<b>Physical</b>								
Enclosure Type	Panel mount; rear collar compresses gasket against panel (5/16" maximum panel thickness); held by M5 studs							
Panel Rating (with proper installation)	Stainless steel: NEMA/UL Type 12/4/4X; IP65/IP66	Black powder-coated carbon steel: NEMA/UL Type 12/4; built to IP65/IP66 standards Stainless steel: NEMA/UL Type 12/4/4X; built to IP65/IP66 standards						
Depth behind Panel	46.2 mm (1.82")		53.8 mm (2.12")	50.0 mm (1.97")	52.8 mm (2.08")	51.8 mm (2.04")	51.3 mm (2.02")	
Front Bezel Outside Dimensions (WxHxD)	338mm x 296mm x 7mm (13.31"x11.64"x0.28")	437.8 mm x 353.6 mm x 7 mm (17.24"x13.92"x0.28")		483mm x 399mm x 7mm (19.0"x15.7"x0.28")	527mm x 330mm x 7mm (20.75"x13.0"x0.28")	483mm x 399mm x 7mm (19.0"x15.7"x0.28")	559mm x 375mm x 7mm (22.0"x14.75"x0.28")	597mm x 375mm x 7mm (23.5"x14.75"x0.28")
Cutout Dimensions (WxH)	308 mm x 263 mm (12.12" x 10.35")	406.9 mm x 323.1 mm (16.02" x 12.72")		453.4 mm x 366.8 mm (17.85" x 14.44")	497.8 mm x 298.5 mm (19.60" x 11.75")	453.4 mm x 366.8 mm (17.85" x 14.44")	528.7 mm x 342.3 mm (20.81" x 13.48")	566.7 mm x 342.4 mm (22.31" x 13.48")
Net / Shipping Weight	8.5 lbs. / 11.4 lbs.	14 lbs. / 18 lbs.		18 lbs. / 22 lbs.	15 lbs. / 20 lbs.	18 lbs. / 22 lbs.	19 lbs. / 23 lbs.	18 lbs. / 21 lbs.
Window Options	Analog Resistive Touch Screen, Tempered Glass, or Acrylic Protective window options. Touch Screen option is a 5-wire resistive system, emulates a mouse, and uses Serial RS-232 or USB interface to host computer. Glass-armored touch screen including sulfur gas protection also available (call for details).							
<b>Compliances and Certifications</b>								
Electrical	UL1950/cUL Recognized, UL508A, FCC Class A, CE	UL 60950 3 <sup>rd</sup> Edition / cUL Recognized Component, UL 508A, FCC Class A, CAN ICES-3A/NMB-3A, CE						
Enclosure, Environmental	UL 50E, WEEE (Reg.No. WEE/DJ1859ZX for UK only)		UL 50E, IEC 60721-3 (Reliability), WEEE (Registration No. WEE/DJ1859ZX for UK only)					
Hazardous Location	UL Listed for Class I, II, III, Division 2, Groups A, B, C, D, F, G; T-Code T4A		UL Listed for Class I, II, III, Division 2, Groups A, B, C, D, F, G; T-Code T4	UL Listed for Class I, II, III, Div. 2, Groups A, B, C, D, F, G; T-Code T5 (AC); T-Code T4A (DC)	UL Listed for Class I, II, III, Div. 2, Groups A, B, C, D, F, G; T-Code T4A	N/A	UL Listed for Class I, II, III, Division 2, Groups A, B, C, D, F, G; T-Code T5 (AC models); T-Code T4A (DC models)	

\* A full list of supported video standards may be found on our website.

\*\* Inputs using optional adapter: HDMI (via HDMI to DVI adapter); DisplayPort (via DisplayPort to VGA or DVI adapter); BNC (via HD-15 to 5-wire BNC adapter). Call for details.

\*\*\* NTSC/PAL composite input available. Call for details.