



# Hope Industrial Systems, Inc.

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## Data Sheet: Panel Mount Monitors and Touch Screens IP65/IP66, NEMA 12/4/4X 12"/15"/17"/19"/19.5"/20"/22"/23"

### Features

- ▶ 12", 15", 17", 19", 19.5", 20", 22", or 23" active-matrix display
- ▶ IP65/IP66 Rated
- ▶ High resolution, high brightness and contrast
- ▶ Long-life backlights – up to 50,000 hours brightness half-life
- ▶ Touch Screen, Tempered Glass, and Acrylic Window options
- ▶ Only 46.2 mm to 53.8 mm deep
- ▶ Black carbon steel and stainless steel faceplates
- ▶ Panel mount without drilling stud holes
- ▶ Cable lengths from 1.5 m to 300 m
- ▶ Industrial Certifications: CE, IEC 60721-3, UL 508A, UL 50E, UL 60950 3<sup>rd</sup> Edition / cUL Recognised 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.

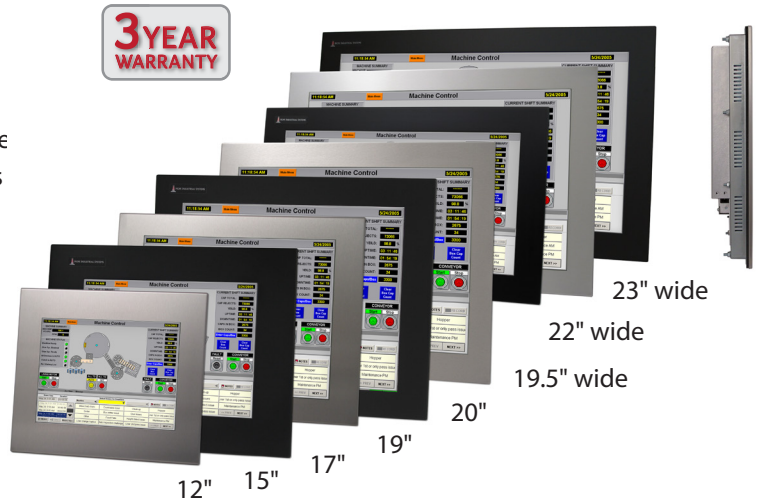
A unique single-cutout, stud-free design and depths of only 46.2 mm to 53.8 mm make them a snap to install. Options like touch screens and KVM Extenders make these displays highly versatile.

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

### Optional Accessories

- ▶ Industrial Panel Mount Keyboards (IP65/IP66 rated)
- ▶ Screen Protectors (all sizes)
- ▶ Extended cable options up to 300 m
- ▶ KVM Extenders

RoHS CE cUL<sup>us</sup>



### 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, return shipping included
- ▶ 24-48-hour repair turnaround (most models)
- ▶ Same day dispatch 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 300m 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	307mm (12.1") diagonal	381mm (15") diagonal	432mm (17") diagonal	483mm (19") diagonal	495mm (19.5") diagonal	511mm (20.1") diagonal	559mm (22") diagonal	584mm (23") diagonal	
Aspect Ratio	4:3		5:4		16:9		16:10		
Image Size (WxH)	246 x 184.5 mm	304 x 228 mm	338 x 270 mm	375 x 300 mm	435 x 239 mm	408 x 306 mm	474 x 296 mm	509 x 286 mm	
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 Colours	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-D, optional DisplayPort or BNC					HD-15, DVI-D, DisplayPort, optional BNC	HD-15, DVI-D, 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	100-240 VAC, 0.5/0.25 A, 60/50 Hz or 9.6-36.6 VDC, 2.5 to 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		0° to 50°C			AC: 0°-50°C; DC: 0°-60°C	0° to 50°C		
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, 10-200 Hz; 0.03g <sup>2</sup> / Hz, 200-2000 Hz								
Altitude	Operating: up to 3.05 km; Non-operating: up to 12.2 km								
<b>Physical</b>									
Enclosure Type	Panel mount; rear collar compresses gasket against panel (7.9 mm maximum panel thickness); held by M5 studs								
Panel Rating	Stainless: sealed to IP65/66 standards; NEMA 12/4/4X	Black powder-coated carbon steel: sealed to IP65/IP66 standards; NEMA/UL Type 12/4 Stainless steel: sealed to IP65/IP66 standards; NEMA/UL Type 12/4/4X							
Depth behind Panel	46.2 mm		53.8 mm	50.0 mm	52.8 mm	51.8 mm	51.3 mm		
Bezel Dimensions (WxHxD)	338mm x 296mm x 7mm	438mm x 354mm x 7mm	483mm x 399mm x 7mm	527mm x 330mm x 7mm	483mm x 399mm x 7mm	559mm x 375mm x 7mm	597mm x 375mm x 7mm		
Cutout Dimensions (WxH)	308 mm x 263 mm	406.9 mm x 323.1 mm	453.4 mm x 366.8 mm	497.8 mm x 298.5 mm	453.4 mm x 366.8 mm	528.7 mm x 342.3 mm	566.7 mm x 342.4 mm		
Net / Shipping Weight	3.86 kg / 5.17 kg	6.35 kg / 8.16 kg	8.16 kg / 9.98 kg	6.08 kg / 9.07 kg	8.16 kg / 9.98 kg	8.62 kg / 10.43 kg	8.16 kg / 9.53 kg		
Window Options	Analogue 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-armoured touch screen including sulfur gas protection also available (call for details).								
<b>Compliances and Certifications</b>									
Electrical	CE, UL 1950 / cUL Recognised, UL 508A	CE, UL 60950 3 <sup>rd</sup> Edition / cUL Recognised Component, UL 508A, FCC Class A, CAN ICES-3A/NMB-3A							
Environmental, Enclosure	IEC 60721-3 (Reliability), WEEE (Registration No. WEE/DJ1859ZX for UK only), UL 50E								

\* 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 (+44 (0) 20 7193 2618).

\*\*\* NTSC/PAL composite input available. Call for details (+44 (0) 20 7193 2618).