



Workstation Monitoring

NOVX OPERATOR/GROUND MONITOR M200/M220/M224

The Novx Operator and Ground Monitors M200, M220, and M224 provide real-time detection and alarm. These digital, small-footprint monitors feature dual-channel/dual-wire body voltage (wrist-strap or garment) plus multi-channel ground (GND) monitoring with proprietary detection and alarm. Programmable with manual push-button alarm threshold set and zeroing, all three models feature individual red/green LEDs for channel status. Different audible alarm tones per channel differentiate alarm types.

	M200	M220	M224
Wrist-strap monitoring channels	2	2	2
Front-panel plugs for WS	Yes	Yes	No
Remote plugs for WS	No	Yes	Yes
Audible & LED alarm	Yes	Yes	Yes
4-20mA Alarm	No	No	Yes
Proximity detection alarm	No	No	Yes

Features

- Body voltage detection
- High and low resistance GND monitoring
- Proximity detection option (M224 only)
- Two wrist-strap inputs
- Audible alarm tone per channel
- Alarm output (M220 only)
- Configurable hard and soft grounds (M224 only)
- Red/green LED per channel
- Digital architecture
- Modular construction

Benefits

- Direct connection to garment or coil cords
- Hard ground and table mat
- Cleanroom compatible
- Quick change consumable parts (normal wear)



Specifications

Wrist-strap BV Detection	M200	M220	M224
Monitoring Channels	2	2	2
Set-point	1-4.5V	1-4.5V	1-10V
Alarm Accuracy	±0.5V	±0.5V	±0.5V
Open Circuit Voltage	<0.5V	<0.5V	<0.05V
Short Circuit Current	<0.001 mA	<0.001 mA	<0.001 mA
Front-panel	Yes	Optional	No
Remote Box	No	Optional	Yes
Ground Monitoring			
Monitoring Channels	2	2	4
Configuration	1 soft, 1 hard	1 soft, 1 hard	4 hard or 2 soft & 2 hard or 3 hard & 1 soft
Soft, Alarm Set-point	500 kΩ-20 MΩ	500 kΩ-50 MΩ	500 kΩ-1 GΩ
Soft, Alarm Accuracy	Value ±20%	Value ±20%	Value ±20%
Soft, Short Circuit Current	<0.002 mA	<0.002 mA	<1 μA
Soft, Open Circuit Voltage	<1.25V	<1.25V	<0.05V
Hard, Alarm Set-point	1-50Ω	1-50Ω	1-50Ω
Hard, Alarm Accuracy	±0.5Ω, ±10% >50Ω	±0.5Ω, ±10% >50Ω	±0.5Ω, ±10% >50Ω
Hard, Short Circuit Current	<5 mA	<5 mA	<0.5 mA
Hard, Open Circuit Voltage	<5V	<5V	<0.05V
General			
Voltage Input	5 VDC, ±5%	5 VDC, ±5%	24 VDC, ±10%
Current Input	50-150 mA	50-150 mA	50-150 mA
Alarm Output	N/A	24V, 25 mA (max)	N/A
Dimensions	1.3H x 2.8W x 2.8D (3.3 x 7.1 x 7.1 cm)	1.3H x 2.8W x 3.0D 3.3 x 7.1 x 7.6 cm)	1.5H x 4.6W x 4.3D (3.8 x 11.7 x 10.9 cm)
Weight	5 oz (142g)	5 oz (142g)	11 oz (312g)
Data Output	No	Open Collector	No
Enclosure	Stainless steel	Stainless steel	Stainless steel
Power Supply	100-240 VAC, 50/60 Hz	100-240 VAC, 50/60 Hz	100-240 VAC, 50/60 Hz
Warranty	Two year limited warranty		

Specifications are subject to change without notice



Novx M224 rear panel.



Novx M200 rear panel.



Novx M220 rear panel.

Flexible Monitoring Options

The **M200** features two operator monitor channels (front-panel only mini-jack connectors) and two channel ground monitors (<0.5V open circuit voltage).

The **M220** features two operator monitor channels (remote box mini-jack connectors) and two channel ground monitors including an open collector alarm status output (<0.5V open circuit voltage).

The **M224** is a low voltage instrument with two operator monitor channels, four selectable grounds (several combinations of hard or soft), EMI detection on grounds, and optional ionizer balance monitoring (<0.05V open circuit voltage).

Body Voltage and Ground Monitoring

The operator may plug a wrist-strap directly into the M200 only or choose the optional Remote Wrist-strap Box (M220 and M224 only). These instruments will also support connection to any monitored garment technology that eliminates the wrist-strap requirement. The mini-jack assembly is a plug-in module to minimize down time when the mini-jacks need to be replaced over time.

Ordering Information

9903-0200-0000	M200 with LED Display
9903-0200-0010	M220 (remote wrist strap boxes and cables separate) and alarm start up output
77-0004	Remote Wrist-strap Box #1 (1 cable, 18-4020-6, per box)
77-0005	Remote Wrist-strap Box #2 (1 cable, 18-4020-6, per box)
18-4020-6	Wrist-Strap remote box cables (1 per remote box)
33-2308	Remote Wrist-strap Box, 1 box for 2 wrist-straps (2 cables needed)
33-1600-6	Wrist-Strap remote box cables; 4 pin to 4 pin dual connection (2 per 33-2308 remote box)
14-21325	M116 & M200 / M220 Power Supply
33-0504	Passive Antenna, 1.75" x 4" Tall with SMA-to-SMA Cable (5 ft)
28-6282	Mounting Bracket for M200 and M220
92-M224	M224 with remote wrist strap boxes and alarm start up output. Passive Proximity Antennae sold separately
77-0021	Remote Wrist-strap Box #1 (1 cable, 18-4020-6, per box) For M224
77-0022	Remote Wrist-strap Box #2 (1 cable, 18-4020-6, per box) For M224
33-1650-6	Wrist-Strap remote box cables (1 per remote box) For M224
14-21323	M224 Power Supply

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