

MSA 9010/9020 Controller Units





Controller units with modular design, remote sensors and dual-channel capability offer a variety of configurations to meet most applications. Units operate with a complete range of gas sensors and transmitters including toxic, combustible and oxygen sensors.

Flexible options for reliable system control

9010/9020 Controllers offer maximum flexibility to work in conjunction with a variety of remote sensors to provide reliable gas detection for a wide range of industries and applications. Advanced design using SMD components throughout plus innovative features put the 9010/9020 LCD Control Units steps ahead of any conventional gas warning system. The 9010 LCD operates with one independent sensor (single-channel) while the 9020 LCD operates with two independent sensors (dual-channel) per control module, offering considerable cost savings while maintaining high reliability and performance. Modular design combined with dual-channel capability allows for many configurations to meet most applications. Each Control Module comes with an independent AC/DC power supply transformer for increased system reliability.

Each module has two (SPDT) relays with change-over contacts for verification of Warning and Alarm conditions (common to both channels in the 9020 version). Full internal diagnostics and inherent reliability minimize false alarms and unexpected down-time. A customized transmission

protocol ModBus RTU can be used for serial bus data transmission such as system configuration, gas concentration, alarm and failure events, alarm inhibit and reset. The 9010/9020 LCD can power the remote sensors (by constant current or voltage), enhancing the versatility of the system. These user-friendly, configurable Control Modules adjust through code access with no tools required.

Liquid Crystal Display

Large, 4-digit, 7-segment, back-lit LCD and bright LED, provide gas concentration, alarm status, measurement units, flags indicating status, and settings such as calibration interval, time-out function, alarm ON delay and alarm inhibit.

TWA-STEL

When operating in connection with toxic sensors, the 9010/20 LCD can be set to alarm when relevant STEL and TWA values are exceeded.

Sensor Wiring

Remote sensors are factory-set to 2-or 3-wire connection, depending on the specific application.

Features and Benefits

- Simple 3-key operation for configuration, calibration and routine operation
- Selectable unit of measure (LEL, LELm, ppm, % Vol, g/m3 or blank)
- Flexible options for 1 to 20 channels
- Enhanced system reliability through individual terminal blocks for each module
- Adjustable calibration timer for calibration reminders
- Leading-edge SMD components and over range function
- 4-20 mA current loop accepted with no control unit calibration required
- Control Modules with independent LCD display specific to each channel
- Error and failure display warnings of any operational anomalies
- An RS-485 interactive serial interface for printer connection

Enclosure Options

Mounting Style	General Purpose Plastic	NEMA 4X Stainless	NEMA 4X Stainless	NEMA 4X Metal	NEMA 4X Metal	XP Metal	XP Metal	Rack Mount
Max # of points	2	20	10	20	10	2	4	20
Max # of 9010's	1	10	5	10	5	1	2	10
Max # of 9020's	1	10	5	10	5	1	2	10
Dimensions (HxWxD)	7.5" x 11.5" x 5.25"	24" x 24" x 13"	22" x 17" x 13"	24" x 24" x 13"	22" x 17" x 13"	15.5" x 14" x 8.6"	17" x 18.3" x 10.25"	5.25" x 19" x 10.5"
Weight	4 lbs.	102 lbs.	67 lbs.	102 lbs.	67 lbs.	52 lbs.	86 lbs.	23 lbs.



NEMA 4X plastic enclosures are available with either a 9010 or a 9020 control board. These enclosures protect the control board against dust and rain.



NEMA 4X metal enclosures are capable of holding between 5-10 control boards, protect the sensors from dust and rain and feature an external alarm acknowledge switch. The same enclosures are available in stainless steel for greater durability.



Explosion-proof metal enclosures are suitable for Class 1, Div. 1 areas when connections are made in accordance with the applicable installation codes.



Rack-mount versions come in a standard rack configuration with wiring access provided in the rear of the unit.

Control Unit 9010/9020 LCD Technical Data

Power supply	115/230V \pm 15% 50/60 Hz, 24 VDC + 15%-20%	
Power consumption	Mod. 9010	Mod. 9020
12 W transformer	9 W	10.5 W
AC supply 25 W transformer	15 W	17 W
DC supply 24 VDC nominal	4 W	6 W
Sensor supply		
Constant current	5-500 mA	
Constant voltage	3-24 VDC	
Sensor connection modes	2 or 3 wires	
Connection terminals	for wires up to 2.5 mm ²	
Input signals	10-200 mV; 4-20 mA	
Output signals		
Analog (normal)	0-20/4-20 mA (selectable) isolated	
Analog (fault)	0/2/4/20 mA/frozen (selectable)	
Serial interface	RS-485	
Alarm levels	3 (Caution - Warning - Alarm)	
Alarm ratings		
Via relay contacts (SPDT)	5 A @ 24 VDC/250 VAC*	
*resistive load		
Alarm handling		
Reset	latching/non-latching	
ON delay	0-9999 seconds adjustable	
Automatic	with specific access code	
Manual	with specific access code	
Electronic speed of response	<0.5 sec. for 100% full scale	
Span and zero drift	< \pm 0.5% full scale	
Repeatability	\pm 1% full scale	
Operating temperature	-10°C (+14°F) to +40°C (+104°F)	
Storage temperature	-20°C (-4°F) to +75°C (+167°F)	
Humidity	90% R.H. non-condensing	
Vibrations	unaffected within 10 to 55 Hz, 0.15 mm bandwidth	
LCD display	back-lit liquid crystal display; 4-digit, 7 segments	
Optical alarms	bright LEDs	
Warm-up and self-diagnosis time	20 sec/channel	
Time-out setting	2-6 min., adjustable	
Default and configuration data	stored in non-volatile memory	
Protections		
AC/DC automatic switching in case of AC power failure through electronic switch		
Accidental tampering	by specific access codes and password	
Software self-diagnosis	by watch-dog and check-sum	
Approvals	complies with UL/CSA 61010-1 per MET	

Note: This Bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



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