GasSens

Modular Gas Detector

B14 Gas Alarm Monitor

OVERVIEW

Accurate, Reliable Alarm, Display and Signal Retransmission

The Badger Meter B14 Series receivers are compact electronic modules that provide local alarm, display, and signal retransmission functions for gas detection systems. The modules are designed to accept input from either 2-, 2-, or 4-wire 4-20 mA transmitters located up to 10,000 feet from the receiver. They are ideally suited for use with any of our toxic or combustible gas transmitters.



FUNCTIONS

B14 Alarm Receivers are DIN rail mounted modules that can be supplied in single or multiple unit enclosures. Each alarm module offers a variety of functions.

LED Display	Gas concentrations are indicated directly in PPM, PPB, percent or percent LEL with the display range selectable by the user.
Three Alarm Setpoints	Each module provides separate caution, warning and alarm setpoints with LED bar indicators of each alarm point. LED indicators flash on initial alarm condition and change to steady on when the alarm is indicated.
Three Relay Outputs	Modules contain individual alarm relays for each alarm setpoint. However, each relay can be assigned to any setpoint to allow multiple alarm functions at a single alarm point. Relays are configurable for either standard or fail-safe operation and for either latching or non-latching operation.
Separate Trouble Alarm	A fourth LED alarm bar and relay are provided to indicate trouble conditions. The trouble alarm and relay activates on loss of input signal or if the 4-20 mA input drops below a specific value.
Remote Reset Input	Isolated input contacts are provided to allow an unpowered switch input for acknowledgment of alarm conditions from a remote location or via telemetry equipment.
Internal Transmitter Power	Modules provide a 24V DC power supply to operate either 2- or 3-wire transmitters.
Signal Retransmission	A 4-20 mA output is provided from each module, optically isolated from the input signal to avoid ground fault problems.
DC Powered	B14 modules are powered from a 12V DC power supply available as an option. Up to 3 modules can be powered from one power supply (or 2 if battery backup is used). Customers provided 12–28V DC supplies may also be used.

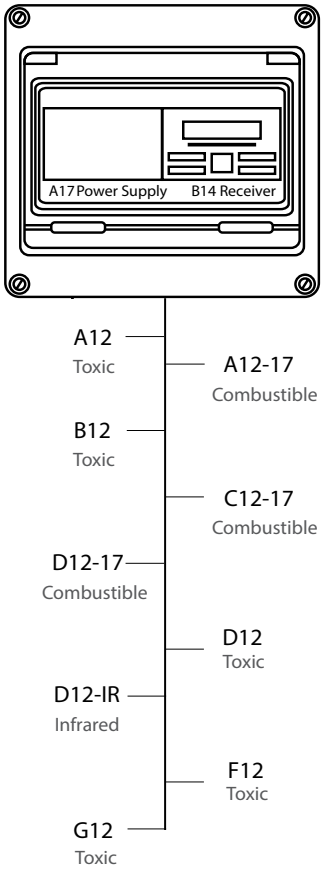


Figure 1: Transmitter input options

Badger Meter

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Product Data Sheet

SYSTEM ENCLOSURES

A variety of NEMA 4X enclosures are available to assemble detection systems from receivers and power supplies. We offer standard enclosures to house up to 12 modules and can supply larger enclosures for systems requiring more points of detection. System integrators can use standard 35 mm DIN rail for mounting modules in their own enclosures.



Single Module Enclosure

Houses a single receiver module for use in DC powered applications where the user supplies the DC power to the system.



Two Module Enclosure

Houses two receivers or one receiver and one power supply. Normally used for 1-point AC powered detectors.



Battery Back-up



Three Module Enclosure

Accommodates two receivers and power supply or three receivers. Used mainly for 2-point detection systems.



Six Module Enclosure

Suitable for two power supplies and four receivers or six receivers. This enclosure is used primarily for 4-point gas detection systems



Audible Horn



Red Strobe

NOTE: The Nine Module enclosure is shown on page 1. The Twelve Model enclosure is not shown.

SPECIFICATIONS

Concentration Display	4-digit LED, programmable range
Input	2-, 3- or 4-wire 4-20 mA transmitter
Output	Isolated 4-20mA, 1000 Ohms max. load
Power	12–28V DC, 400 mA max.
Concentration Alarms	Three adjustable concentration alarms. Setpoints adjustable from 5–100% of span.
Alarm Indicators	LED bars for Caution, Warning and Alarm
Indicator Function	Caution and Warning indicator non-latching. Alarm indicator latching.
Alarm Relays	3 assignable relays, 7 A, 120V AC (4 A, 220V AC) resistive. Alarms assignable to any one of 3 programmable setpoints.
Relay Function	Configurable for Normal/Fail-safe, Latching/Non-latching, 2/second/10 second delay, or external horn function
Trouble Function	Front panel LED bar indicator and SPDT, 7 A relay. Factory set for fail-safe operation.
Alarm & Relay Reset	Activated from front panel switch or through remote reset switch
External Reset	Input terminals provided for unpowered contact input
Gas Indicator	LED bar on front panel with gas symbol overlay
Electrical Connections	Quick disconnect pluggable terminal blocks
Module Enclosure	Noryl
Module Mounting	Mounts to 35 × 7.5 mm DIN rail
Size	2.8 in. W × 3.6 in. L × 2.3 in. D (70 mm x 90 mm x 58 mm)
Operating Temperature	–40 to 55 °C
Humidity	0–99% RH, non-condensing

CE

OPTIONS AND SYSTEM ENCLOSURES

80-0005	Single Module enclosure
80-0006	Two Module enclosure
80-0007	Three Module enclosure
80-0033	Large Three Module enclosure
80-0008	Six Module enclosure
80-0027	Large Six Module enclosure
80-0024	Nine Module enclosure
80-0026	Twelve Module enclosure
00-0055	Power supply (For 2 alarm modules and battery backup or 3 alarm modules)
28-0004	65 Watt power supply (For up to 12 alarm modules)
00-0057	Battery backup unit
00-0058	Audible horn, internal 12V DC
35-0008	Horn, industrial external 120V AC
35-0010	Horn, industrial external 220V AC
35-0002	Strobe with red lens, 12V DC
35-0005	Strobe with red lens, 120V AC
35-0018	Strobe with red lens, 230V AC

ORDERING INFORMATION

Model B14-CC-DDDD-E Alarm Module

Specify each alarm module separately using the code number below. Then add the enclosure, power supply and other options as needed for a complete system. Specify A12 or B12 transmitters separately.

Suffix DDDD - Measurement Range

10	Bromine Br_2	23	Hydrogen Fluoride HF	36	Acid Gases HX
11	Chlorine Cl_2	24	Hydrogen Sulfide H_2S	37	Ethylene Oxide (ETO) C_2H_4O
12	Chlorine Dioxide ClO_2	25	Nitric Oxide NO	38	Formaldehyde HCOH
13	Fluorine F_2	26	Nitrogen Dioxide NO_2	39	Alcohol CXOH
14	Ozone O_3	27	Sulfur Dioxide SO_2	40	Acetylene C_2H_2
15	Ammonia NH_3	28	Arsine AsH_3	41	Carbon Dioxide CO_2
16	Carbon Monoxide CO	29	Diborane $B2H_6$	42	Oxides of Nitrogen NOx
17	Combustible Gas CH_4	30	Germane GeH_4	43	Chlorine (Low 12) Cl_2
18	Hydrogen H_2	31	Hydrogen Selenide H_2Se	44	Chlorine Dioxide (Low C12) ClO_2
19	Oxygen O_2	32	Phosphine PH_3	45	Hydrocarbon (Specials) HC
20	Phosgene $COCl_2$	33	Silane SiH_4	46	Nitrous Oxide N_2O
21	Hydrogen Chloride HCl	34	Hydrogen Peroxide H_2O_2	47	Dimethylamine $(CH_3)_2NH$
22	Hydrogen Cyanide HCN	35	Iodine I_2		

Suffix DDDD - Measurement Range

Code the measurement range using a four digit number. The alarm module range is determined by the range of the transmitter connected to the module. For a 0–10 ppm chlorine transmitter input, the code would be 0010.

Suffix E - Units of Measurement

1	ppm
2	ppb
3	%
4	% LEL

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