



A Darley Company

Safety Awareness Bulletin:

Upgrading from CMD-2M, CMD-3M and CMD-4M CO Detectors to *NEW* CMD5-MD 12/24 vdc CO Alarms



CMD-2M/3M



CMD-4M



CMD5-M

Upgrade to CMD5-M

CMD-2M or CMD-3M

If you have CMD-2Ms or CMD-3Ms there are a few items you need to know to convert to the new CMD5-M:

1. The units mount on the wall or ceiling in the same manner but the hole spacing is slightly different. You can usually use the top hole, drill a new second bottom hole and fill the one old hole with filler or putty. However, be sure to use the pan head screws (flat bottom of head) to mount the new bracket – not the countersunk flat head screws used with the CMD-2M/3M back plate. **CAUTION - The flat head screws may crack the new CMD5-M bracket when tightened!**
2. If there are marks on the wall, an indentation from the old detector or a junction box in the wall you may need the *optional* adapter plate (P/N 100102 – specify white, black or ivory) to cover the area or opening since the CMD5-M is slightly shorter than the CMD-2M/3M.
3. The two power wires connect up the same way – be sure to use crimp connectors and wrap with electrical tape for a secure connection.

Step-by-Step Instructions



Existing CMD-2M/3M



Squeeze cover and remove and unplug connector



Bend bottom corner prongs outward and remove circuit board
Remove two screws and bracket



Install new bracket with new pan head screws



New CMD5-M bracket with optional mounting plate



Align holes and rotate detector slightly *clockwise* to attach CMD5 alarm



CMD Adapter Plate
P/N 100102-W

CMD-4M

If you have CMD-4M there are a few items you should know about converting to the new CMD5-M:

1. The units mount on the wall or ceiling in a similar manner with the same mounting holes. However, be sure to use the pan head screws (flat bottom of head) to mount the new bracket – not the countersunk flat head screws used with the CMD-4M back plate. **CAUTION - The flat head screws may crack the new CMD5-M bracket when tightened!**
2. If there are marks on the wall, an indentation from the old detector or a junction box in the wall you may need the optional adapter plate (P/N 100102 – specify white, black or ivory) to cover the opening since the CMD5-M is slightly shorter than the CMD-4M.
3. The two wires connect the same way – be sure to use crimp connectors and wrap with electrical tape for a secure connection.

4. If your units are interconnected the two additional wires get connected the same way as the old CMD-4M. **NOTE: All interconnected units must be the same – you cannot mix CMD-4Ms and CMD5-MxIs.**

Note the CMD5-M draws significantly less power (4 vs. 30 mA @ 12 vdc).

In addition to all of the great new features with the new CMD5-M CO Alarm, including the battery-powered model, there is another major difference over the CMD-4M that we need to point out.

The CMD-4M-RLY is a “Relay” model that was used for:

- Interconnecting multiple units
- Shutting down a generator
- Both of the above
- Sending a signal to a third party monitoring system

The new CMD5-M works differently. You can use a standard stand-alone version, or an interconnect (“I”) version if you are just connecting multiple units. This saves you the cost of the relay in every CO alarm.

If you are shutting down a generator, you need the interconnect (“I”) version AND an RCM-5 relay control module. The advantage here is you only need one relay per boat, not one per CO Alarm – another cost savings.

If you are sending a closure signal to a third party alarm system, you need the interconnect (“I”) version AND one RCM-5 relay module per monitoring zone. Again, the advantage here is you only need one relay per zone, not one per CO Alarm – additional cost savings.

NOTE:

1. If CMD4-Ms are interconnected they all need to be replaced at the same time – you cannot mix and match CMD4-Ms and CMD5-Ms, unless they are independent stand-alone units.



Also available in black

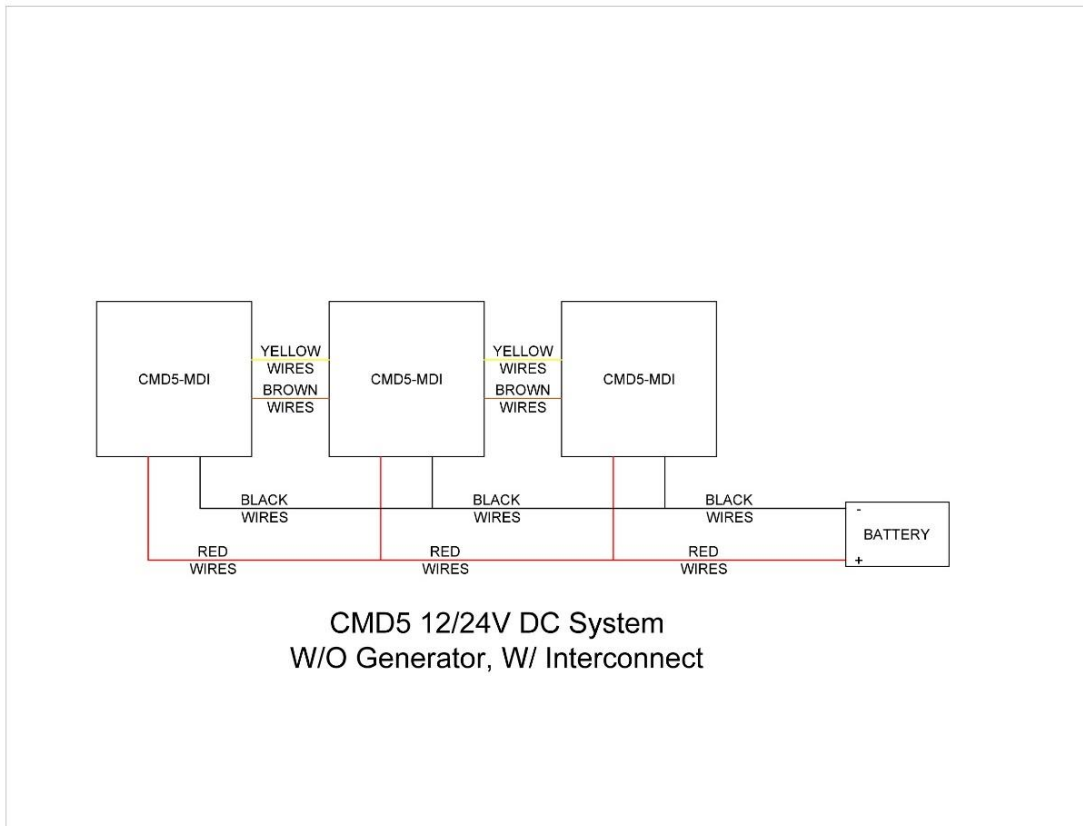
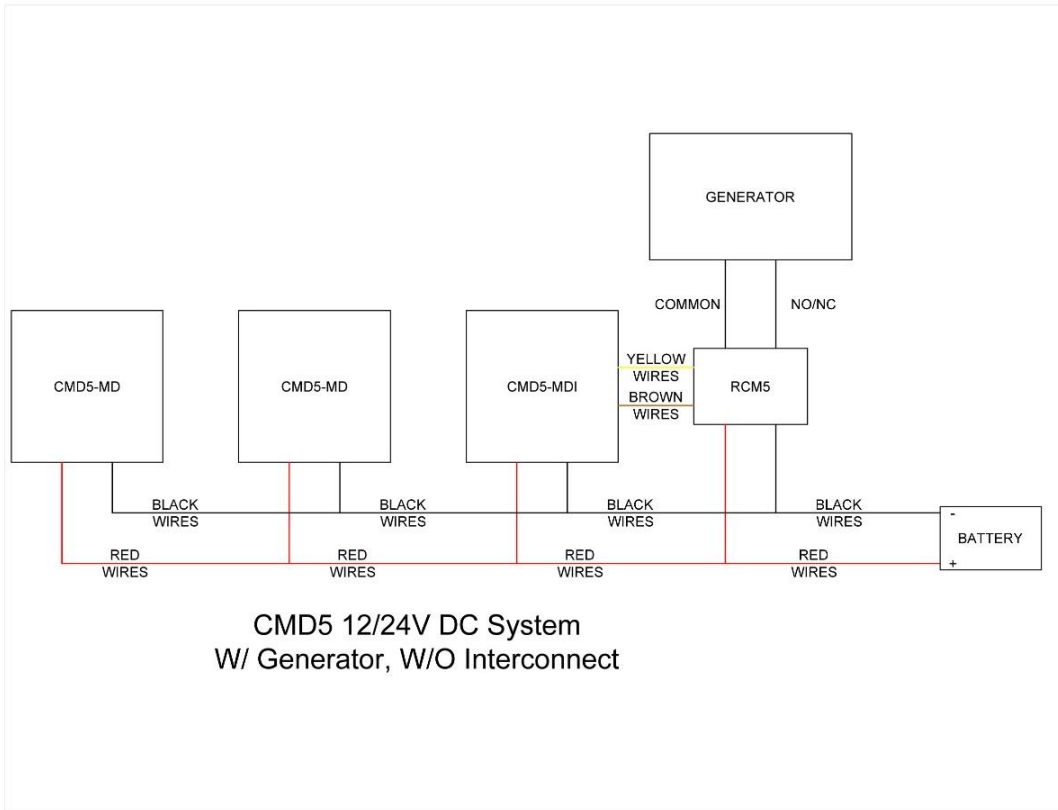
<u>Model</u>	<u>Stand-alone Alarms</u>	<u>Interconnected Alarms</u>	<u>Generator Shutdown</u>	<u>Third Party Alarm system</u>
		<u>Old Style for Reference</u>		
CMD-4M	X			
CMD-4M-RLY		X	X	X
		<u>New Style</u>		
CMD5-MD	X			
CMD5-MDI		X	X	X
CMD5-MB	X			
CMD5-MBI		X	X	X
RCM-5 (Dry contact closure only)			X (Requires add'l 12/24V DC power supply)	X (Requires add'l 12/24V DC power supply)

“I” - Interconnect version with two more wires than standard



RCM-5 Relay Control Module

Typical Circuits



REMINDER - NEW ABYC Standards for Carbon Monoxide Detectors

NEW 2015/2016 ABYC standards require that all boats (diesel *and* gas powered inboard, outboard and sailboats) manufactured after July 31, 2016 be equipped with CO detectors in all accommodation spaces on the craft.

Some states, i.e. Minnesota, have already enacted (effective 5/1/18), or are talking about enacting, a similar regulation.

The verbiage in the new standard is stated below:

ABYC A-24 CARBON MONOXIDE DETECTION SYSTEMS

Based on ABYC's assessment of the existing technology, and the problems associated with achieving the goals of this standard, ABYC recommends compliance with this standard for all boats, associated equipment, and systems manufactured after July 31, 2016.

The standard goes on to say:

24.4.5 Enclosed accommodation compartment – One contiguous space, surrounded by permanent structure that contains all the following:

- a. **designated sleeping accommodations,**
- b. **a galley area with sink, and**
- c. **a head compartment.**
- d. 24.7.1 A carbon monoxide detection system shall be installed on all boats with an enclosed accommodation compartment(s).

NOTE: A cuddy intended for gear storage and open passenger cockpits, with or without canvas enclosures, is not considered to be an enclosed compartment.

And then:

24.7.1 A carbon monoxide detection system shall be installed on all boats with an enclosed accommodation compartment(s).

In the 2014/2015 standard, the CO detectors were only required on boats equipped with gasoline engines or generators – now that they are required on ALL boats with accommodation areas.

Installation

Installation of the detector should be at eye level for easy monitoring and service. The detector should not be mounted within one foot of corners or other “dead” air spaces and should not be located within five feet of any cooking appliance.

REMINDER

Carbon Monoxide – “The Silent Killer”

Carbon monoxide (CO) is generated wherever combustion occurs, including the operation of gasoline engines, as well as heating and cooking appliances. It is invisible, odorless, tasteless, and deadly. Faulty venting or even a wind shift can create a dangerous situation, particularly in confined areas like boat cabins. Typical symptoms of CO exposure can be mistaken for the flu or seasickness, making accurate on board CO detection a necessity.

200 PPM:	Slight headache within 2 to 3 hours.
400 PPM:	Frontal headache within 1 to 2 hours.
800 PPM:	Dizziness, nausea and convulsions within 45 minutes. Insensible within 2 hours.
1,600 PPM:	Headache, dizziness and nausea within 20 minutes. Death within 30 minutes.
3,200 PPM:	Headache, dizziness and nausea in 5 to 10 minutes. Death within 30 minutes.
6,400 PPM:	Headache and dizziness in 1 to 2 minutes.
12,800 PPM:	Death in less than 3 minutes.

Xintex CMD5-M CO Alarm Features

The **Xintex CMD5-M CO Alarm** is used when generator shutdown or multiple locations are not desired.

The **Xintex CMD5-MxI CO Alarm** is used when generator shutdown or multiple locations are desired.

Low Battery Current Draw – CMD5-MD

Extremely low current draw (<4 mA) permits direct battery connection.

Modern Design for Inconspicuous Protection

Takes up less wall space with its low profile design.

Generator Shutdown Protection

When dangerous CO levels are detected, the CMD5-MxI automatically shuts down the generator(s).

Multiple Location Warning

When one CMD5-MxI alarms, all connected CMD5-MxI alarms sound.

Contact Closure to Third Party Monitoring System

When the CMD5-MxI alarms, the RCM-5 relay contact can close a circuit to a third party system.

How the Xintex CO Alarm Works

The CO Alarm uses a microprocessor to measure and accumulate CO levels. Using the principle of “Time Weighted Averaging” (TWA), the CO Alarm monitors CO concentration, temperature, and time to calculate levels of Carboxyhemoglobin (COHb). COHb is the degree to which the oxygen carrying capacity of the blood is impeded by the union of carbon monoxide to the hemoglobin and is expressed as a percentage. In simpler terms, our bodies prefer absorbing CO to oxygen, and COHb is the ratio of absorbed carbon monoxide to oxygen in the bloodstream. The CO Alarm calculates this COHb as a function of time and determines the appropriate alarm time.

