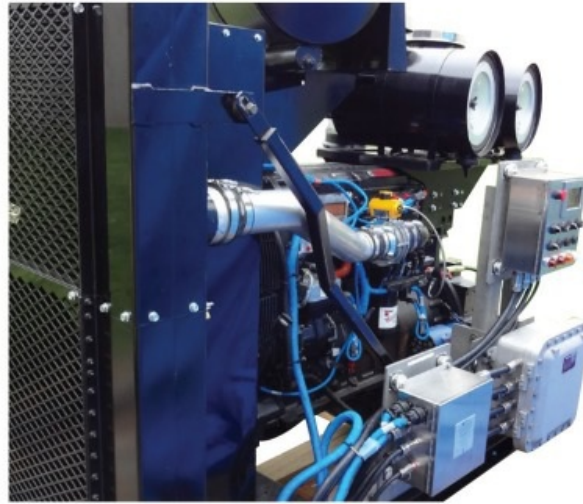


EXPLOSION PROOF CUSTOM CONTROL PANELS

Hazardous Area Control Panels



Your equipment regularly needs to operate in hazardous areas and meet international requirements (ATEX, CSA & UL). CMR can develop and customize your products. We routinely develop explosion proof products to operate safely in flammable atmospheres, a particular hazard of methane production and transmission.

// Description

Your demand for new equipment, especially in the Oil & Gas industry, has enabled CMR to develop a range of skills in specifying and building critical solutions for common engine, compressor and pumps applications. Best of all, CMR can do it quickly.

Your designs may need to meet specific industrial standards. We have years of experience in gaining product approvals such as CE, CSA, IEC, NEMA, ATEX, ITAR or UL and marine classification standards including Lloyd's Register (LRS), Det Norske Veritas, (DNV), Nippon Kaiji Kyokai, (NKK), Bureau Veritas (BV), Korean Register (KRS), China Corporation Register of Ships (CRS), Registro Italiano Navale (RINA), Russian Register (RRS), and the American Bureau of Shipping (ABS).

Working either independently or to your design and build schedule, prototypes can be developed in a local application center and transferred for production to a best-cost CMR manufacturing location.

A recent project undertaken by CMR in the US will be the first system of its type available for approved Ex Class I, Division 2 applications.

Compliance with this standard ensures the panels are safe for operation in locations where there is the potential for exposure to flammable volatile liquids or flammable gases being handled, processed or used.

The new technology has been developed to meet specific customer needs and will be used to control Cummins electronic controlled industrial engines, using the CM2150 ECU, for oil and gas power generators, pumps and compressor systems. It also features 'fail safe' architecture in case of a system error or component failure.

In developing these systems, CMR has drawn on its engineering services, including specific expertise in hardware design and manufacturing, featuring advanced wiring harnesses and control technology.

This capability is available across our full portfolio including electronics, sensors and wiring harnesses.

Electronics & Software - Control Panels - Hazardous Area Control Panels

// Applications

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES - HAZARDOUS & MACHINERY

OIL & GAS - OFFSHORE

OIL & GAS - ONSHORE

POWER - ENGINES & GENSETS

// Markets

INDUSTRY & UTILITIES

OIL & GAS

POWER

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Electronics & Software - Control Panels - Custom Panels

GENSET CUSTOM CONTROL PANELS

Custom Panels



CMR's custom genset panel capability can accommodate any low to mid volume need for any panel, junction box or electrical system interface requirement. Typically used in demanding environments, CMR's engineers are experienced in implementing solutions to meet your requirements.

// Description

Using CMR engineering protocol and experience, we can design and build products optimized for your application. Using developmental tools unique to CMR as well as standards such as ProE, AutoCAD and VeSys Harness, CMR will exceed your expectations.

CMR can build multiple varieties of Control Panel or interface cabinet to fulfil your most demanding requirements. Typically used for engine monitoring, controls, gensets, marine and other industrial applications, they can be built to CE, IEC, NEMA, CSA or other standards.

The unique CMR process allows us to manufacture low, medium or high volumes, while maintaining strict quality standards and delivery performance.

Our control panels are all about ease - integration, configuration, installation and use.

CMR is at your disposal with full design support, prototyping, on-site validation, commissioning and service.

Please contact the nearest CMR facility to define your requirements. Our engineers are ready to help.

// Applications

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES - HAZARDOUS & MACHINERY

OIL & GAS - OFFSHORE

OIL & GAS - ONSHORE

POWER - POWER PLANT

POWER - ENGINES & GENSETS

TRANSPORTATION - LAND

TRANSPORTATION - MARINE

Electronics & Software - Control Panels - Custom Panels

// Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

POWER

TRANSPORTATION

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LOCAL OPERATING PANELS (LOPS) FOR MARINE ENGINE & INDUSTRIAL APPLICATIONS

Local Operating Panel (LOP)



CMR marine engine Local Operating Panels are Specified by the world's leading high horsepower engine and marine companies. Using powerful CLARINUX™ software based on the LINUX Operating System, our LOPs can be fully integrated, configured and installed for quick and easy customer use.

// Description

LOPs operate advanced proprietary modular CMR technology to manage simultaneously the functions of engine safety, shut down and condition monitoring.

For marine applications, CMR LOPs provide a vessel's crew with a single integrated control system that is easy to use, particularly in the case of those EFIC engines (Electronic Fuel Injection Controlled) that need to comply with the International Maritime Organisation (IMO) regulations for MARPOL Annex VI Tier III, aimed at reducing pollution emissions.

CMR LOP systems process and display all user defined engine parameters, trigger local alarm outputs, update the alarm list and store events in the log book. Built upon modular architecture, LOP operates with one acquisition unit and one Human to Machine Interface (HMI) module.

All implementations are supported by CMR with design expertise, prototyping, on-site validation, commissioning and service support.

Electronics & Software - Control Panels - Local Operating Panel (LOP)

// Specifications

• Electrical Connection	.....	• CAN Bus Interface to Engine Control Unit (ECU) • J1939/CAN Open • Mod Bus • RS422 • RS485 • Ethernet
• Number Of Inputs	.....	1,728 Channels (Modular)
• Material Of Construction	.....	Steel cabinet
• Weight	.....	20kg (approx.)
• Length	.....	380mm (min)
• Width	.....	380 mm (min)
• Other Dimensions	.....	210mm (min depth)
• Other Features	.....	• Custom design (paint, colour, gauges, electronics) • Engine start/stop • Remote control • Auxiliary and pre-heating control • IP56 rated

// Applications

DEFENSE - ARMY	OIL & GAS - ONSHORE
DEFENSE - NAVY	POWER - POWER PLANT
INDUSTRY & UTILITIES - PROCESS INDUSTRIES	POWER - ENGINES & GENSETS
INDUSTRY & UTILITIES - HAZARDOUS & MACHINERY	TRANSPORTATION - LAND
OIL & GAS - OFFSHORE	TRANSPORTATION - MARINE

// Markets

DEFENSE	POWER
INDUSTRY & UTILITIES	TRANSPORTATION
OIL & GAS	

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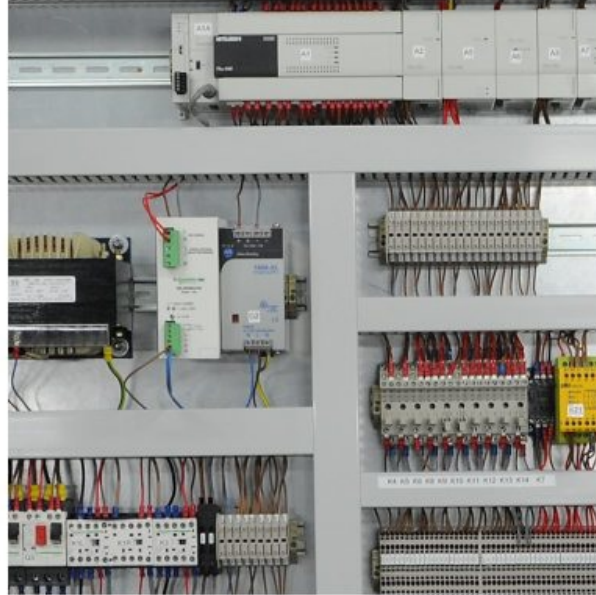
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MARINE BALLAST WATER TREATMENT MANAGEMENT CONTROL PANELS

Ballast Water Control Panels



CMR develops marine Ballast Water and Feed Water control panels and systems, working to customer design requirements and parameters. Applying CMR's Goldfinch™ process, customers receive reduced costs and lead times meaning that RFQ's and tender response is improved while ROI is increased. In a nutshell, through Goldfinch™ our OEM customers gain a competitive edge.

// Description

CMR manufactures high quality, best-cost solutions, meeting the needs of ship builders, owners and operators.

Driven by IMO marine legislation, in a move that affects an estimated one third of the world maritime fleet or 50,000 vessels, marine operators are implementing custom ballast water management programmes. This revolves around ensuring that ship water discharge is free of organisms that may survive and out-compete native species, becoming invasive and causing damage to local ecosystems.

To help meet this need, advanced and reliable ballast water and feed water control panels and systems are available from CMR, which ensure proper performance and prevent time consuming and costly damage to components.

Typically, these panels employ:

- PLC-based control systems
- HMI user interface
- Mild or stainless steel construction
- Ingress Protection: IP54
- Voltage Range: 380 – 690V, 3-Phase, 50/60Hz

CMR can add value by bringing its panel building experience and expertise to bear for ballast water treatment system manufacturers, with the capacity to globally source products and components for compliance with Marine Classification societies.

Following manufacture, all panels are subject to rigorous inspection, including high-voltage flash testing to ensure the panels meet customer requirements and Class Rules.

// Applications

TRANSPORTATION - MARINE

// Markets

TRANSPORTATION

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Electronics & Software - Control Panels - Mil-spec Panels

MILITARY MIL-SPEC NAVY & ARMY ENGINE CUSTOM CONTROL PANELS

Mil-spec Panels



CMR supplies engine and genset control panels for use in military applications for army and navy deployment. They are designed and manufactured to the highest standards to correct and reliable performance. Equipment and components meet the stringent standards of performance to comply with what is known as MIL-SPEC (United States defense standard) standards.

// Description

CMR can deliver MIL-SPEC-grade marine engine control equipment, instrumentation, controls and power management for offshore, marine, engine and industrial applications.

Core product groups include electronics and software, custom engineering solutions, fuel systems, industrial sensors, switchboards and wiring systems.

Three critical areas for military applications of marine engine control equipment are as follows:

- vibration testing of shipboard equipment for electromagnetic compatibility (MIL-S-167, rev. 1A)
- electromagnetic interference (MILS-461, rev. F)
- high-impact mechanical shock testing requirements for shipboard machinery (MIL-S-901, rev. D)

While MIL-STD 461 is the basis for electromagnetic compliance for most navies around the world, most civilian organizations, including CMR Group and its customers, use these specifications to test component robustness in harsh environments with high electromagnetic pollution, which can be applied to non-military oriented products.

MIL-STD 461 effectively establishes verification requirements for immunity from electromagnetic interference — emissions and susceptibility — applied to electronic, electrical and electromechanical equipment and subsystems, which may be designed or procured for the North Atlantic Treaty Organization (NATO) navies and other international naval organizations and agencies.

All CMR Group MILSPEC equipment is designed and classified as “essential to the safety and continued combat capability of end users” and provides continuous performance throughout the product operational life.

In addition to compliance with previously mentioned critical performance criteria, equipment is also compliant with the following, in which compliance is maintained by continuous review and analysis:

- MIL-STD-108 E, “Definitions of Basic Requirements for Enclosures for Electric and Electronic Equipment”

Electronics & Software - Control Panels - Mil-spec Panels

- MIL-DTL-2212 J, "Contactors and Controllers, Electric Motor AC or DC, and Associated Switching Devices".
- MIL-E-2036 D, "Enclosure for Electric and Electronic Equipment, Naval Shipboard"
- DOD-STD-2143, "Magnetic Silencing Requirements"
- MIL-E-917 E, "Electric Power Equipment Basic Requirements"
- MIL-P-15024 E, "Plates, Tags, and Bands for Identification of Equipment"
- MIL-STD-454 N, "Standard General Requirements for Electronic"

// Applications

DEFENSE - ARMY

DEFENSE - NAVY

// Markets

DEFENSE

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Electronics & Software - Control Panels - Standard Control Panels

STANDARD CONTROL PANELS

Standard Control Panels



CMR's standard panels can be built in medium to high volume levels for any panel, junction box or electrical system interface requirement. Typically used for I/O, terminations, splices, engine monitoring, controls, gensets, marine and other industrial applications, they can be built to CE, IEC, NEMA, CSA or other standards using common components.

// Description

Using CMR engineering protocol and experience, we can build a product optimized for your range of applications.

CMR can set-up, integrate and deliver a highly flexible solution based on our own brand electronics and CLARINUX™ software to deliver a modular system based on:

- HMI colour display units such as CLARNINUX™, SIMS™, Rack 65™ or Rack 121™ with touch screen or button functionality
- Alarm Monitoring System capability with multiple I/O
- Engine & Genset Safety Modules (CMR ESM™ module)
- Data acquisition and power supply (SCM™ system & MS™ series modules)
- Analog displays (CMR Q series™ indicators)
- Custom positioned safety buttons and switches

// Applications

DEFENSE - ARMY	OIL & GAS - ONSHORE
DEFENSE - NAVY	POWER - POWER PLANT
INDUSTRY & UTILITIES - PROCESS INDUSTRIES	POWER - ENGINES & GENSETS
INDUSTRY & UTILITIES - HAZARDOUS & MACHINERY	TRANSPORTATION - LAND
OIL & GAS - OFFSHORE	TRANSPORTATION - MARINE

Electronics & Software - Control Panels - Standard Control Panels

// Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

POWER

TRANSPORTATION

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