HM CRAGG
critical power +

INDUSTRIAL ENCLOSURES
for Integrated Power Systems and Services

HM Cragg is proud to offer **Industrial-Rated Enclosures** for backup power systems in challenging or alternative applications.

INDUSTRIAL ENCLOSURES *engineered to meet the challenges posed by these markets and more:*

manufacturing • oil and gas • process control • plant floor • water/wastewater treatment • machine builders
food and beverage • pulp and paper • mining • automotive • IoT/EDGE • telecom • transportation

We provide enclosure solutions for these **APPLICATION CHALLENGES**:

harsh, extreme environments • outdoor • high/low temperatures • direct sunlight • dust/dirt/sand • salt spray
water-condensing humidity/dripping/rain/sleet/snow/ice • caustic/corrosive chemicals • smoke/oily mist
ventilation/air flow • heat dissipation/cooling • accessibility/equipment serviceability • hydrogen build-up

Guide to Understanding Enclosure Ratings

Ingress Protection

		Non-Hazardous Locations			
		Indoor		Indoor/Outdoor	
UL Type Rating:	1	12	3R	4	4X
Equivalent Ingress Protection Rating:	IP20	IP54	IP24	IP66	IP66

Protects against:

Category		1	12	3R	4	4X
Solids	Initial-Incidental Contact	X	X	X	X	X
	Falling Dirt	X	X	X	X	X
	Circulating Dust		X		X	X
	Settling Airbourne Dust		X		X	X
	Windblown Dust				X	X
Liquids	Light Splash		X	X	X	X
	Hosedown and Splash				X	X
	Temporary Submersion					
	Prolonged Submersion					
	Rain, Snow & Sleet			X	X	X
	Ice Laden					
Chemicals	Oil and Coolant Seepage		X			
	Oil and Coolant Splash					
	Corrosion				X	

HM CRAGG
critical power +

1 Modular Enclosure
UL Type 12

Standard Features:
- Industrial Control Panel Enclosures, NEMA Type 12, IP 55. Enclosure is rated for indoor use and protects equipment against the ingress of dust, lint and other debris, as well as dripping and splashing from noncorrosive liquids.
- High-strength, roll-formed steel frame with drop-in hardware for quick, secure and bonded accessory installation
- Removable, bolt-on top, side, bottom and rear panels IP54 and UL Rated Type 12
- 2 sets (4 rails) 19" rack rails for rack-mount UPS applications
- 6U, 12U, 18U, 30U, 42U
- 24"W X 40"D
- Powder coat finish corrosion-resistant – RAL 7035
- Single door, dual access (door front/rear)
- T-handle latch/lock or double-bit latch
- Sealed with formed-in-place foam gasket technology to meet NEMA Type 12 and IP 55 protection ratings
- 4" plinth-style fork lift base with anchor blocks in each corner
- Media/document pocket
- Removable sidewall gland plate for conduit entry

2 Unibody Enclosure
UL Type 12, 3R, 4, 4X

Standard Features:
- Industrial control enclosure for use in indoor and outdoor applications. Protects equipment against the ingress of dust, lint and other debris, as well as varying levels of protection against liquids, including an option for an additional level of protection against corrosion.
- Welded, mild-steel or stainless steel
- Mounting channels along the top, bottom and sides of enclosure's interior
- 2 sets (4 rails) 19" rack rails for rack-mount UPS applications
- 6U, 12U, 18U, 30U, 42U
- 24"W X 40"D
- Powder coat finish corrosion-resistant – RAL 7035
- Lift eyes, sunshield, full interior insulation standard
- Single door, dual access (door front/rear)
- Keyed 3-point latch/locking handles
- Sealed with formed-in-place foam gasket technology
- 4" plinth style fork lift base with anchor blocks in each corner
- Media/document pocket
- Removable sidewall gland plate for conduit entry

OPTIONAL ACCESSORIES
for industrial enclosures

Enclosure Accessories

Custom Interior/Exterior Fittings and Accessories
- HMI command panels
- Mounting plates and rail systems
- Uni-strut custom mounting assemblies
- Door contact sensors
- Water sensor
- Support arms
- Shelves and drawers
- Cable management
- Temperature/humidity probe
- Biometric and RFID door handle locks
- Door window kit
- 2- and 4-post rack up-rights
- Sub-panel device mounting
- Enclosure lighting

Power and Distribution
- Cable entry and routing
- Grounding and busbar power distribution
- Load center power distribution
- Terminal blocks for neutral and grounding
- Fused or breaker main input over-current protection
- Accessory power over-current protection
- Din rail, sub-panel mounted power distribution

Passive and Active Thermostatically Controlled Air Heating, Cooling and Filter Systems
- Ventilation filter/grill assembly
- Door and roof-mounted ventilation fan/filter assembly – 16-560 CFM (fan capacity increases with additional fans)

Active Air Cooling Systems [for Type 12, 3R, 4(X) outdoor applications]
- Air Conditioning 900BTU- 24,000BTU *(can be installed with multiple devices for redundancy or additional cooling capacity)*
- Heat exchangers and chillers
- Thermo-electric coolers
- Full interior insulation
- Air-to-air heat exchanger
- Heaters
- Filter fan options

Hydrogen Mitigation Accessories

Hydrogen Mitigation [for Type 3R, 4(X) outdoor applications]
- Hydrogen sensor(s)
- Active venting system
- Passive ventilation ports

Battery Off-Gassing Mitigation
- For enclosure applications requiring VRLA-type batteries installed in a sealed, Type 4/4X/6 enclosure
- Used in conjunction with Hydrogen Sensor-H2 Relays control input power and actuate mechanical louvers and 500CFM ventilation fan
- Thermostatically controlled
- 1% H2 concentration visible alarm and notification through relay contacts (N.O. or N.C.)
- 2% H2 concentration visible alarm and additional notification through relay contacts and system shutdown

Enclosure XL Polyvent Protective Vent Kit
- RMR Enclosure XL Polyvent Protective Vent Kit provides ventilation and equalizes air pressure in the event of drastic temperature changes
- Vent ports allow air and hydrogen mix to vent out of the enclosure passively, while keeping moisture and humidity out of the enclosure

UL 508a Certified Systems

ETL US Intertek **UL 508A INDUSTRIAL CONTROL PANEL FABRICATOR**	• UL, NEMA and IP-rated enclosures and accessories • UL and IEC-listed and recognized power system components • Enclosure systems carry ETL/UL508A certification defined scope of work • Project documentation • Approval drawings • Testing, inspection, certification

Enclosure Ratings and Certifications

UL	• Requires compliance testing of electrical enclosures by qualified evaluators independent of the manufacturer • Sends site inspectors to manufacturers ensure adherence to prescribed manufacturing methods and materials specifications • Specifies that an enclosure fails the water-tight test if even a single drop of water enters the enclosure • Safety consulting and certification company
NEMA National Electrical Manufacturers Association	• Does not require independent testing • Leaves compliance up to the manufacturer • Performs tests for environmental conditions such as corrosion, rust, icing, oil and coolants • The most prevalent in the USA
IEC International Electrotechnical Commission	• Requires testing for compliance by qualified evaluators independent of the manufacturer • Provides a system for specifying the enclosures of electrical equipment on the basis of the degree of protection • Not specifies degree of protection against mechanical damage of equipment, risk of explosions, or conditions such as moisture (produced, for example, by condensation), corrosive vapors, fungus, or vermin • The most prevalent in the world

The tests and evaluations for other characteristics are not identical between the standards, so the IEC Enclosure Classification Designations cannot be exactly equated with UL/NEMA Enclosure Type Numbers

Our Valued Partners

EATON

RITTAL

MARATHON POWER

FALCON

CPI CHATSWORTH PRODUCTS | RMR Industrial Enclosures

BENNING World Class Power Solutions

SCE SAGINAW CONTROL & ENGINEERING *Your Enclosure Source*

Pfannenberg ELECTRO-TECHNOLOGY FOR INDUSTRY

STULZ

ICEqube

MARWAY POWER SOLUTIONS

WAGO

HM Cragg's Custom Solutions Group can custom engineer, build, and/or modify enclosures to meet non-standard specifications.

CSG
Custom Solutions Group
by HM Cragg

Custom Options

- Custom Dimensions: up to 98" height; flexible widths and depths (application specific)

- Baying kit – ability to secure multiple enclosures together (multi-door)

- Custom door-sill height sub-floor for mounting free-standing devices (large UPS applications)

- RAL or custom colors available

- Custom door configurations

- Alarm signaling – flashers, sounders, light stack

- Custom height leg stands or plinth base

- Leveling feet and/or caster kits

- Lift eyes, sunshield, full interior insulation

- Sub-panels for device or din rail installation

All options listed on inside page can be selected as part of a full custom enclosure.

HM CRAGG
critical power +