Experience the new standard in component protection solutions

Appleton™ PlexPower™ Motor Starter

Technology and Application Guide.

EMERSON™

Unsurpassed Protection, Easy Maintenance, Flexible Application

The Appleton™ PlexPower™ Motor Starter by Emerson™, building on the success and technology of PlexPower™ Panelboards, provides component level protection for off-the-shelf motor starters. The lightweight, corrosion-resistant, stainless steel design offers easier maintenance, quicker installation, and straightforward operation.

Delivering Class I, Division 2, Groups B, C and D NEC and CEC certifications in addition to a Type 4X enclosure rating, the PlexPower™ Motor Starter provides superior electrical apparatus protection, control and convenience, in hazardous, wet, and corrosive environments.

Product Highlights

Its lightweight, modular level protection design, off-the-shelf replaceable components, and quick quarter-turn access latches make the PlexPower™ Motor Starter an ideal solution for hazardous environments looking for a flexible, lightweight alternative to traditional cast and bolted systems.

Outside

External Actuation
Standard configuration includes external actuators and a solid door.

Operators
Standard Appleton™ Unicode 2 operators with LED lights for easy operation.

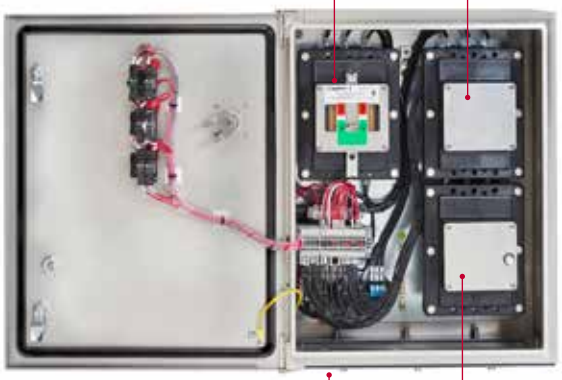
Mounting Feet
Robust hardware with welded mounting feet for greater strength.

Latches
Quarter turn latches for easy access. No danger of improperly torquing cover bolts or damaging a precision machined flamepath.

Inside

Main Breaker
Main breaker for simple disconnection of contactor or motor starter.

Contactor Module
Standard off the shelf contactors are available up to NEMA size 1.



Gland Plate
Gland plate on the bottom and optional removable gland plates on every side allow for the addition of new cable entries in the field.

Overload Module
Overloads available with external reset push buttons.

Low Total Cost of Ownership

Providing protection at the component level, the technology of the PlexPower™ Motor Starter Solution greatly reduces the total cost of ownership by requiring less personnel to install, maintain, and operate. Because of its modular design, you can locate the PlexPower™ Panel closer to motors and equipment, shortening the cable runs and reducing labor and cable costs.

Easy Maintenance

The corrosion resistant, stainless steel design of the PlexPower™ Motor Starter is lightweight, making it easier to install and maintain. While traditional cast solutions demand more attention maintaining flame path integrity, the PlexPower™ Motor Starter component level housing flame path technology ensures a higher quality of safety with less hazardous access to the panel.

Easier Operation

Unlike its cast enclosure competitors, the PlexPower™ Motor Starter Solution is easily opened with a few quarter-turn latches rather than many standard bolts. Modules are simple to open and require minimal tools. Compatible with the existing PlexPower™ platform, this solution offers an ambient temperature range of 0°C to +40°C, is factory sealed, and has an external actuation handle, so you can shut down the panel without opening it.

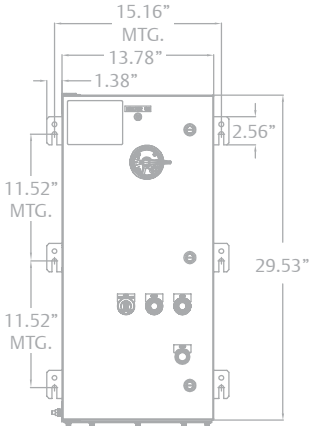
Off-the-Shelf Components

Off-the-shelf components create less downtime and provide greater inventory flexibility. Order what parts you need, when you need them, from the supplier of your choice.

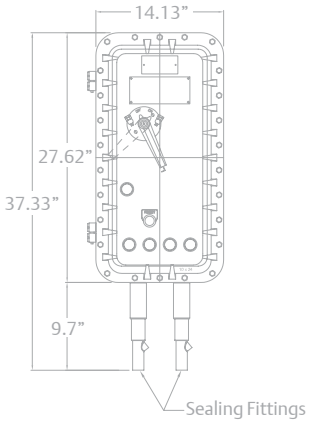
Size Comparison

PlexPower™ Motor Starter Solution versus Traditional Motor Starters

Traditional solutions utilize large, heavy cast aluminum enclosures, while our solution is lightweight stainless steel. In addition to its lighter weight, PlexPower™ tends to be slimmer than many of its cast enclosure competitors and can be configured in single or multiple motor starter designs to save even more space while meeting your exact specifications.



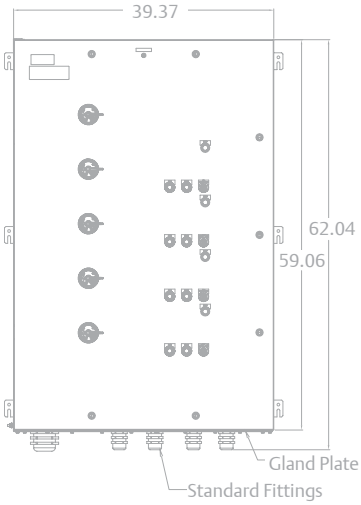
PlexPower™ Motor Starter



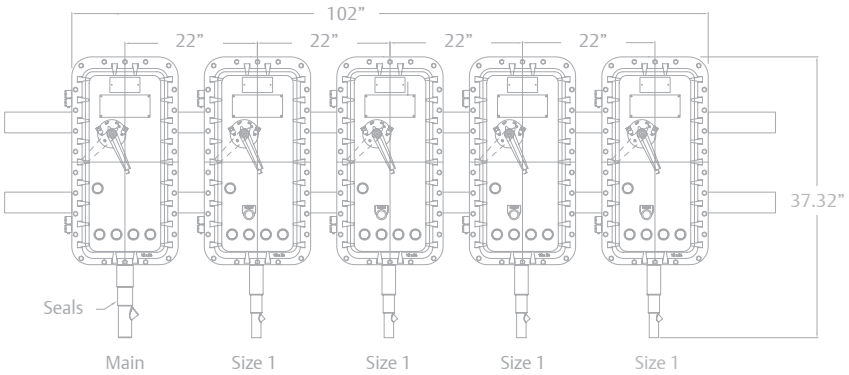
Cast Motor Starter with Seals

Consolidate Space with Multiple Motor Starters in One Panel

Choosing a PlexPower™ Multiple Motor Starter Panel over a traditional cast switch rack solution saves space, requires fewer people to install, and doesn't need conduit seals or cable glands. Less cable is needed for installation and it's easier to add to or upgrade capacity without adding additional enclosures. PlexPower™ is not only limited to switch rack mounting. The enclosures can be mounted standalone at various locations throughout a facility, giving you the application convenience you need while saving you space.



PlexPower™ Motor Starter



Cast Motor Starter with Seals

Off the Shelf Components

The Appleton™ PlexPower™ Motor Starter off-the-shelf components, offer less downtime and provide greater inventory flexibility. You have the replacement parts you need, when you need them.

Breaker Flexibility

1. **Rugged Termination:**
   Each housing connects to the panelboard by means of line terminations designed for unyielding performance through years of heavy vibrations and shocks.
2. **Flameproof enclosure housing:**
   Labyrinth joint construction and flame arrestors maintain hazardous location rating while allowing easy disassembly for servicing breakers.
3. **Venting plate:**
   Unique design of housing allows safe heat dissipation, enabling breakers to maintain their rated amperage while eliminating nuisance tripping.
4. **Field Replaceable Components:**
   Standard, off-the-shelf circuit breakers and fuses are easy to obtain and reduce inventory costs and downtime.

Contactor Module

Overload Relay Module

Safety Advantage

ArcFlash Specs

An arc flash, or electrical discharge that travels through the air can result in serious injury and even death. The causes of an arc flash vary, and everything from dust to corrosion or faulty installation can trigger it. Protecting against an arc flash requires proper protective equipment and safety procedures, including arc flash boundaries, barricades, and often de-energizing the entire unit for servicing or maintenance.

The Appleton™ PlexPower™ Motor Starter modular design can limit workers' exposure to high levels of incident energy when installed close to the application.

Modular Design

With a traditional cast solution, all of the components that arc and spark are enclosed in one box. These enclosures are extremely heavy, have numerous bolts and use a precision ground flame path. These factors make a traditional cast solution difficult to install and maintain, while creating potential safety issues every time the enclosure is opened.

The PlexPower™ Motor Starter component level protection means every component has its own module with its own flame path. The compartmentalization technology limits exposure and accidents, diminishes the risk of damaging the flame path, and creates greater flexibility and convenience.

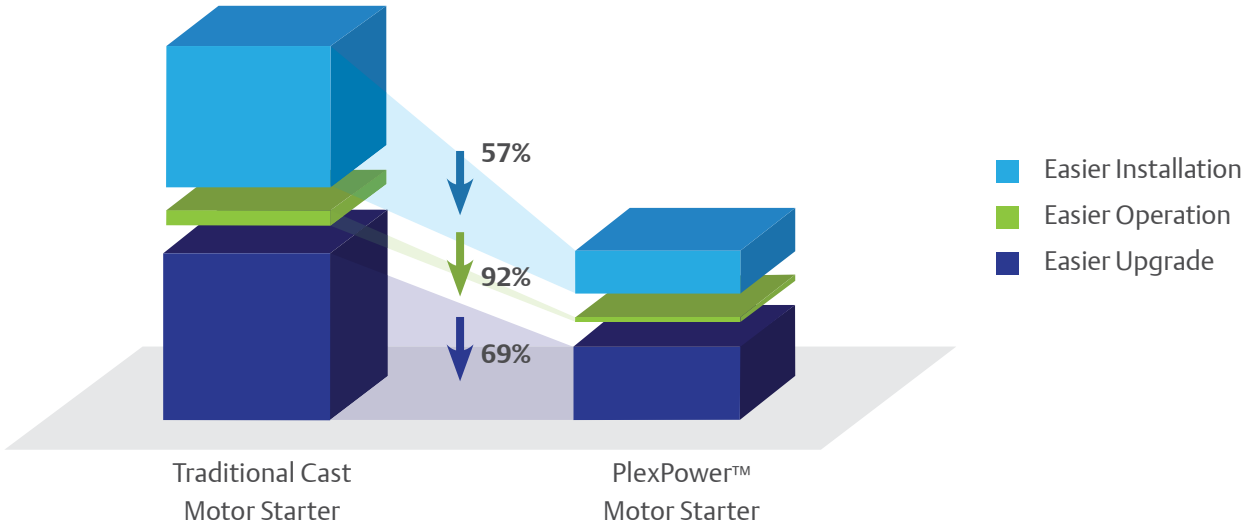
Less Down Time

Accessibility to enclosures is one of the biggest challenges for end users installing, operating, and maintaining these hazardous area solutions. On traditional cast enclosures, to access internal components, up to 70 bolts have to be loosened and then tightened again, requiring extended downtime and increased maintenance personnel. Improperly torqued or missing bolts can be dangerous and cause accidents or safety risks. Unlike its cast enclosure competitors, the PlexPower™ Motor Starter Solution is quickly opened with a few quarter-turn latches rather than multiple bolts. Only standard tools are needed, which means you could be back up and running in less time with less headache.

Total Cost of Ownership

Lower Operational Costs

PlexPower™ Motor Starters are quicker and easier to install, operate, upgrade and maintain – delivering substantial savings compared to the total cost of ownership costs of a traditional cast motor starter.



Installation Savings

Cast enclosures are typically heavy and require more people to install. They also have many bolts to remove prior to opening and servicing. The PlexPower™ Motor Starter, offers a lightweight, stainless steel design that doesn't require conduit seals poured during installation. Additionally, because of its component technology, you can locate the motor starter closer to the motors and equipment that it is starting and controlling; the shorter conduit and cable run means a reduction in installation labor and cable costs.

Maintenance Savings

To work on a component in the PlexPower™ Motor Starter, you can simply shut off the power to that specific element, not the entire control panel, which means less downtime and faster servicing. Additionally, the PlexPower™ Motor Starter quarter turn latches grant faster access and there are no bolts to torque or misplace. Finally PlexPower™ Motor Starter off-the-shelf components mean you can source replacement parts from a distributor of your choice for easier maintenance and cost flexibility.

Safety

With Class I, Division 2, Groups B, C and D NEC and CEC certifications in addition to a Type 4X, this solution offers individual housing flame path technology. In a cast solution, the flame path's integrity is precision ground. If you open up the enclosure, and accidentally gouge the flame path, it will no longer meet safety requirements. However, the PlexPower™ technology means every component has an individual flame path, making panel maintenance less hazardous.

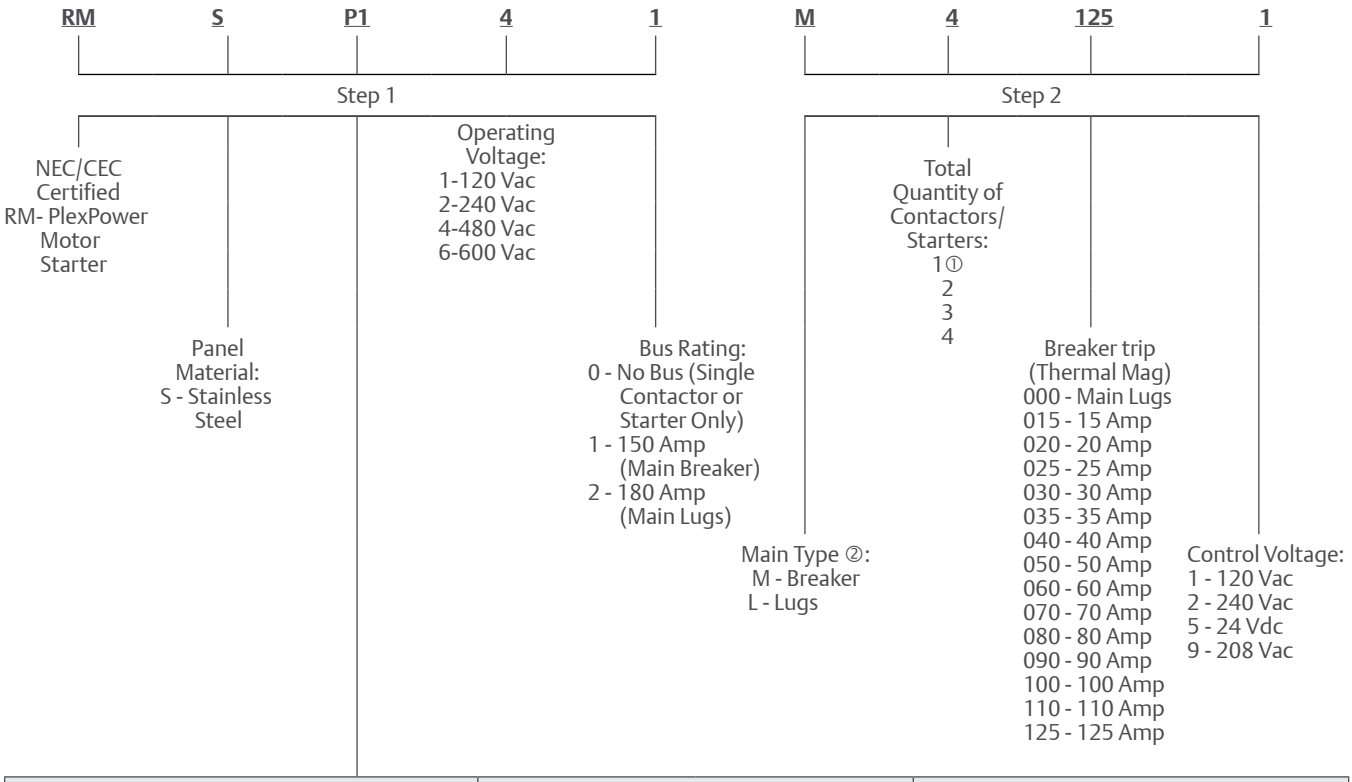
PlexPower™ Motor Starter Specifications

Steps to Creating Catalog Number

RM	S	P1	4	1	M	4	125	1	4	A	C	S	MC	030	A	—	—
Step 1					Step 2				Step 3							Step 4	Step 5

Step 1: Choose enclosure size and operating voltage based on application.
Step 2: Define total quantity of contactors or starters. If a main breaker is desired, indicate amperage rating.
Step 3: Define the quantity, function, size and operators for each size of contactor and motor starter.
Step 4: Repeat this step for each contactor or starter configuration.
Step 5: Options: Add option in alphanumeric order.

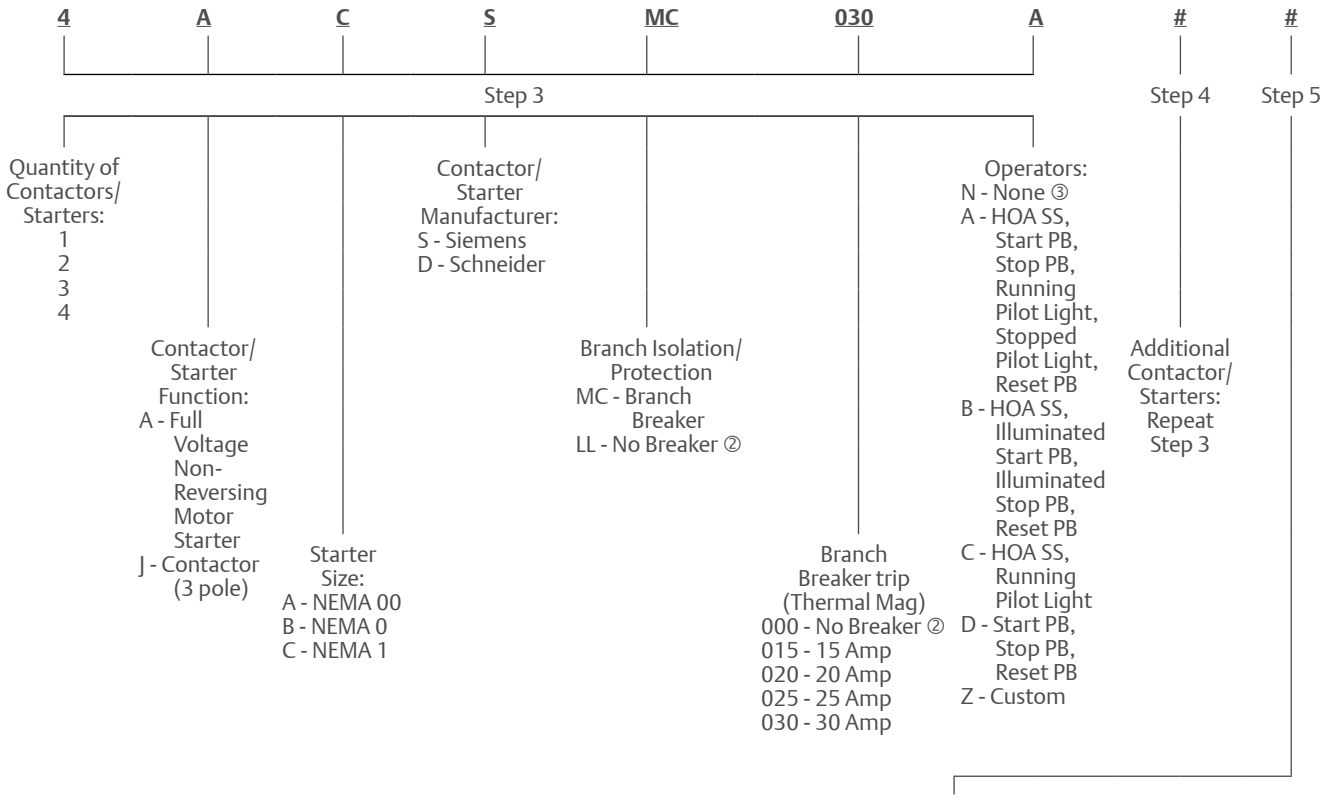
Product Ordering Guide



	Main Lugs		Main Breaker	
	Size	Dimensions	Size	Dimensions
Non combination contactor	M1	370x370x200	—	—
Non combination contactor with heater option	W1	450x370x200	—	—
Non combination starter	N1	560x350x200	—	—
Combination contactor	N1	560x350x200	—	—
Combination starter	T1	560x450x200	—	—
	R1	750x350x200	—	—
(2) Combination Contactors	I1	875x750x250	E1	1130x750x250
(2) Combination Starters	Q1	1130x1000x250	Q1	1130x1000x250
(3) Combination Contactors	E1	1130x750x250	G1	1500x750x250
(3) Combination Starters	Q1	1130x1000x250	P1	1500x1000x250
(4) Combination Contactors	G1	1500x750x250	G1	1500x750x250
(4) Combination Starters	P1	1500x1000x250	P1	1500x1000x250

① *Always use Main Lugs when total quantity is 1.*

PlexPower™ Motor Starter Specifications



Suffix for Other Options

Description	Suffix
Class I, Division 2, Zone 2 equivalency only	D2
Gland plate (bottom is standard)	
—Top side gland plate	GPT
— Left side gland plate	GPL
— Right side gland plate	GPR
— No gland plate	GPN
Thermostatically controlled heater	HTR
Inverted feed	INV ④
Lockable wing knobs	P ④
Phenolic/ lamacoid nameplate (specify legend)	SP
Stainless steel legend plate (specify legend)	TB

② Only available when total quantity of contactors and starters equals 1.
③ For motor starter, reset push button for overload is provided.
④ Only for multiple contactors and motor starter panels.

PlexPower™ Motor Starter Specifications

NEC/CEC Certifications

Ex de IIB+H_2 T6 ①
Class I, Zone 1, AEx de IIB+H_2 T6 ①
Class I, Division 2, Groups B, C, D T6 ①
Class II, Division 2, Groups F, G
Class III
Type 4X, IP66

① *T4 when the HTR heater option is included.*

Industries and Applications

PlexPower™ Motor Starters provide protection of heat tracing and other resistive electrical equipment in Class I, Division 2, Groups B, C and D NEC/CEC hazardous locations. Indoors or outdoors, in weather exposed and corrosive environments, our PlexPower™ solutions provide the ideal electrical distribution and control for every part of your facility.

Chemical and Petrochemical Manufacturing

Waste and Wastewater Treatment Facilities

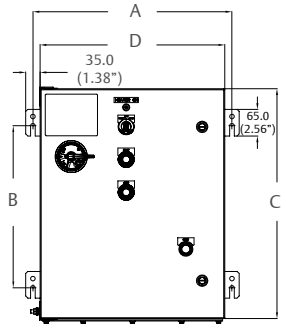
Offshore Drilling Rigs

Refineries

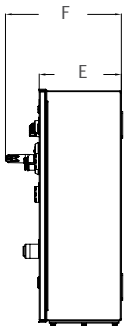
PlexPower™ Motor Starter Specifications

Contactor and Starter Panel Standard Configurations

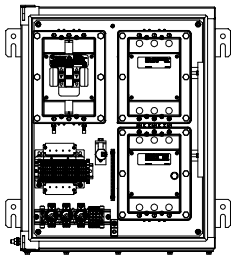
Size T1



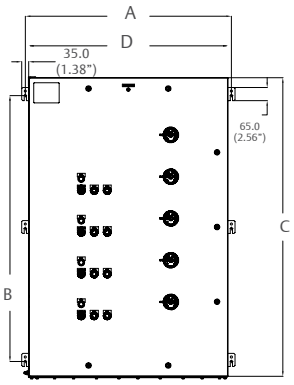
Front View



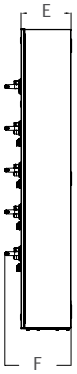
Side View


Internal View

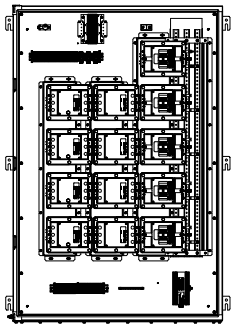
Size P1



Front View



Side View


Internal View

Dimensions in Millimeters (Inches)

	Mounting Feet Horizontal	Mounting Feet Vertical	Overall Length	Overall Width	Overall Height	Height With Operators
	A	B	C	D	E	F
Single Contactor and Starter Panel Standard Configurations						
M1	405 (15.94)	285 (11.22)	370 (14.57)	370 (14.57)	200 (7.88)	223 (8.81)
W1	405 (15.94)	315 (12.4)	450 (17.72)	370 (14.57)	200 (7.88)	223 (8.81)
N1	385 (15.16)	395 (15.55)	560 (22.05)	350 (13.78)	200 (7.88)	282 (11.13)
T1	485 (19.09)	395 (15.55)	560 (22.05)	450 (17.72)	200 (7.88)	282 (11.13)
R1	385 (15.16)	585 (23.04)	750 (29.53)	350 (13.78)	200 (7.88)	282 (11.13)
Multiple Combination Contactor and Starter Panel Standard Configurations						
I1	785 (30.91)	710 (27.96)	875 (34.45)	750 (29.53)	250 (9.85)	332 (13.09)
E1	785 (30.91)	965 (38.0)	1130 (44.49)	750 (29.53)	250 (9.85)	332 (13.09)
Q1	1035 (40.75)	965 (38.0)	1130 (44.49)	1000 (39.37)	250 (9.85)	332 (13.09)
G1	785 (30.91)	1335 (52.56)	1500 (59.06)	750 (29.53)	250 (9.85)	332 (13.09)
P1	1035 (40.75)	1335 (52.56)	1500 (59.06)	1000 (39.37)	250 (9.85)	332 (13.09)

EXPERIENCE THE INNOVATION.

Component level protection and a lightweight, corrosion resistant design come together in the Appleton™ PlexPower™ Motor Starter to create an exceptional solution for electrical power control device protection in wet and hazardous locations everywhere. Contact your local Appleton™ representative or visit www.appletonelec.com to learn more today.

Modular level protection that is easy to install, maintain, and operate.

Appleton™ is the cornerstone brands of Emerson's Electrical Apparatus and Lighting business; trusted worldwide to make electrical installations safer, more productive and more reliable.

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