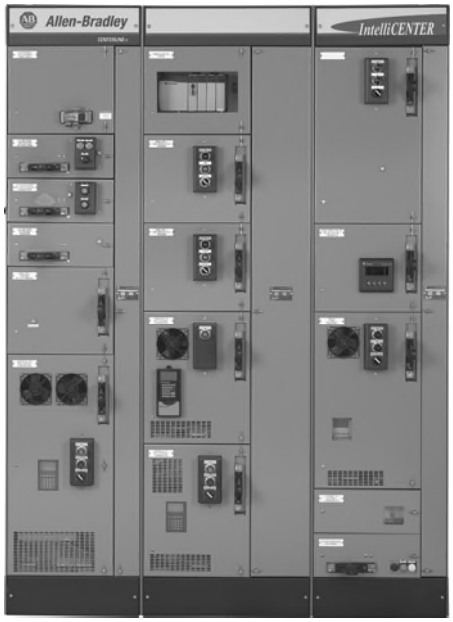
General Information

CENTERLINE® 2100 Motor Control Center



CENTERLINE® 2100 Motor Control Center with IntelliCENTER Technology

Publication Overview

Publication 2100-CA001x-EN-P is a catalog used for CENTERLINE® 2100 Motor Control Centers (MCCs).

Footnotes

While using this publication, please read all footnotes throughout the publication. Footnotes contain necessary information about the configuration and limitations of sections, units and options being offered.

Other Resource Publications for CENTERLINE 2100 Motor Control Centers

[1]

Publication	Title
2100-SR012*x*-EN-P	CENTERLINE 2100 MCC Specification Guide
2100-SR003*x*-EN-P	CENTERLINE 2100 MCC Specification Checklist
2100-4.2	Mains and Incoming Lines Dimension
2100-IN012*x*-EN-P	CENTERLINE 2100 User Manual
2100-6.0.2	Renewal Parts Publication
2100-AT003*x*-EN-P	Power System Configuration Considerations for Selection of CENTERLINE 2100 MCCs
2100-SR008*x*-EN-P	DeviceNet Specification Guide
2100-TD019*x*-EN-P	DeviceNet Hardware Manual

Contact your local Rockwell Automation sales representative, Allen-Bradley distributor or visit www.rockwellautomation.com/literature.

CENTERLINE 2100 MCC Applications

CENTERLINE 2100 MCCs are suitable for use on 3-phase, 3-wire or 4-wire, Wye connected power systems, rated 600 V or less, 50 or 60 hertz, which have a solidly grounded neutral. CENTERLINE 2100 MCCs may also be used on other power system configurations, however, some units and options may not be available. Refer to Appendix page 247 for additional information.

Service and Storage Conditions

CENTERLINE 2100 MCCs conform to NEMA standard ICS 1-1993 for service and storage conditions. All MCCs should have an ambient operating temperature above 0°C but shall not exceed 40°C with up to 95% non-condensing humidity. If the equipment is stored, the ambient temperature shall be above -30°C but shall not exceed 65°C. In addition, MCCs have an altitude class of 2km. The altitude class of 2 km designates equipment for installation where the altitude does not exceed 2000 meters (6600 feet). For installation above 2000 meters, Contact your local Rockwell Automation Sales Office for derating requirements.

UL/cUL/CSA Marking

CENTERLINE 2100 MCCs are listed by Underwriters Laboratories, Inc. (file number E49289) as complying with Standard Safety UL 845 (UL) and either listed by Underwriters Laboratories, Inc. or certified by Canadian Standards Association (CSA) as complying with standard C22-2, No. 254-05 (cUL or CSA). CENTERLINE 2100 MCCs also meet the requirements in Mexican standard for MCCs, NMXJ-353-ANCE-2006. The MCC product, sections and units will therefore carry the respective marking unless otherwise indicated in the footnotes on the various pages in this publication.

ISO 9001 Certification

The facilities that develop and manufacture CENTERLINE 2100 MCCs are located in Milwaukee and Richland Center, Wisconsin, Cambridge, Ontario, Canada, Tecate, Mexico and Guadalupe, Mexico. All facilities have been certified to be in conformance to the requirements of Quality Management System ISO 9001. These facilities presently are certified by Det Norske Veritas to ISO 9001: 2000, certificate number CERT-9379-2004-AQ-HOU ANAB, effective May 30, 2007.

CE Marking

The European Union (EU) has established a program whereby products are tested and qualified to meet its harmonized standards and to fulfill the EN Directives. Upon completion of this testing and qualification, special documentation is required so the products may bear CE marking. Included with this program is the requirement for special instruction literature, product labeling, quality programs, special design requirements, etc. Generally, the CENTERLINE 2100 MCC product can fulfill these requirements, but due to the customization that is required, the CE marking of the product is available only on the Engineered delivery program. In case of variable frequency drives (as well as other solid-state devices), the EU deemed it necessary to add an EMC directive (2004/108/EC). This directive requires more stringent RF emission and immunity standards than normal. To meet these requirements and carry the CE mark, the CENTERLINE 2100 drive packages can be adapted with EMC tested RFI filters and additional shielding hardware. These special packages may require larger MCC enclosures. Note: The CE requirement is for the European Union/Community and is not a mandate for other parts of the world. For more information, visit http://www.ab.com/certification/#cemark.

IEC 60439

The CENTERLINE 2100 structures and many units fulfill IEC 60439 type tested assembly (TTA) and unit requirements. Should custom designs and modifications be required, these can be qualified to IEC 60439 as partially pre-tested assembly (PTTA) and unit requirements.

American Bureau of Shipping (ABS)

CENTERLINE 2100 MCCs have fulfilled the requirements and are approved by the American Bureau of Shipping (certificate 99-SB55875-X). CENTERLINE 2100 MCCs do meet ABS shipping requirements, but due to required customization, ABS maritime shipping is available only on the Engineered program.

NEMA Defined

NEMA—National Electrical Manufacturers Association.

NEMA Class

The following is a description of Class I, as paraphrased from NEMA standard ICS 18-2001: Class I motor control centers shall consist of mechanical groupings of combination motor control units, feeder tap units, other units and electrical devices arranged in a convenient assembly. They include connections from the common horizontal power bus to the units. They do not include interwiring or interlocking between units or to remotely mounted devices, nor do they include control system engineering. Only diagrams of the individual units are supplied.

NEMA Class II interwiring offers the addition of interlocking and wiring between units as specifically described in overall control system diagrams supplied by the purchaser. Contact your local Rockwell Automation Sales Office for availability.

NEMA Type

Class I motor control centers can be provided in NEMA Type A or B construction:

- Type A—User's power and control connections are made directly to the device within the unit.
- Type B—Terminal blocks are supplied for user's control termination within unit insert. On NEMA size 1 through 3 starter units and 30 A to 100 A contactors units, terminal blocks are also supplied for user's load terminations (NEMA Type BT). NEMA Space Saving units do not include power terminal blocks (NEMA Type BD).

NEMA/IEC Enclosure Comparison

The following table is a comparison of Allen-Bradley CENTERLINE 2100 MCC NEMA enclosure type numbers to IEC Standard 60529, Classification of Degrees of Protection Provided by Enclosures. The comparison is based on data from tests conducted on the CENTERLINE 2100 MCC enclosures and the NEMA enclosure type test requirements, which meet or exceed the IEC enclosure classification designation test requirements

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NEMA Type 1 vented (with or without gasketed doors)	IP20
NEMA Type 1 vented with filters (with or without gasketed doors)	IP30
NEMA Type 1 non-vented (without gasketed doors)	IP40
NEMA Type 1 with drip hood = NEMA Type 2 (with or without gasketed doors)	IP41
NEMA Type 3R	IP44
NEMA Type 12 without bottom plates	IP53
NEMA Type 12 with bottom plates	IP54
NEMA Type 4	IP65

NEMA Enclosure Type Descriptions

NEMA Type 1:

Type 1 units and sections are intended for indoor use, primarily to provide a degree of protection against contact with the enclosed equipment in locations where unusual service conditions do not exist. The enclosures are designed to meet the rod entry and rust resistance design tests. The enclosure is sheet steel, treated to resist corrosion.

NEMA Type 1 with gasketed doors (sometimes referred to as 1G):

Type 1 with gasketed unit doors are completely gasketed around the perimeter of the unit doors. All gasketing is closed cell neoprene.

NEMA Type 3R:

Non-walk-in front mounted only. Door-within-a-door construction. Type 3R units and sections are intended for outdoor use, primarily to provide a degree of protection against falling rain and to avoid damage from the formation of ice on the enclosure. They are designed to meet rod entry, rain, external icing and rust resistance design tests. They are not intended to provide protection against conditions such as dust, internal condensation or internal icing.

NEMA Type 4:

Non-walk-in front mounted only. Door-within-a-door construction. Type 4 units and sections are designed for indoor and outdoor use, primarily to provide protection against windblown dust and rain, splashing water and hose-directed water. They are also designed to remain undamaged by the formation of ice on the enclosure. They are designed to meet hosedown, external icing, rod entry and rust-resistance design tests. The enclosures are not designed to protect against internal condensation or internal icing.

NEMA Type 12 [1]:

Type 12 enclosures are intended for indoor use, primarily to provide a degree of protection against dust, falling dirt and non-corrosive dripping liquids. They are designed to meet drip, dust and rust resistance tests. They are not intended to provide protection against conditions such as internal condensation.

[1] This publication refers to standard NEMA Type 12 design (i.e., standard sheet steel). For stainless steel NEMA Type 12 enclosures, Contact your local Rockwell Automation Sales Office.

Delivery Programs

CENTERLINE 2100 MCC products are available on several quick delivery programs and limited to equipment described in this publication.

SC and PE:

Products indicating SC or PE delivery provide SC-I and PE-I delivery. When options are added or specified for a section, time of delivery is determined by the longest lead time.

SC-I:

This program offers stock-supported, individual plug-in units as well as vertical sections with field installed plug-in units. This program applies to all plug-in units and vertical sections unless they are labeled SC-II. The SC-I program provides the quickest delivery.

SC-II:

This program offers stock-supported vertical sections, with factory-installed units for a completely assembled MCC. This is either SC or SC-II. Units specifically labeled SC-II must be factory installed and are not for plug-in installation in the field.

PE-I and PE-II:

Shading indicates equipment that is offered on the PE-I or PE-II program. These programs offer a broad range of pre-engineered units and sections and a slightly longer lead time than our SC programs. While PE-I units are available for plug-in installation in the field, units specifically labeled PE-II must be factory installed.

Engineered:

Equipment or modifications not available on the above delivery programs may be available on the Engineered program. This program offers the complete line of assembled motor control equipment, custom wired for the customer's needs. Additionally, a wide range of special control and bus options are offered, making this our most versatile delivery program. Contact your local Rockwell Automation Sales Office or Allen-Bradley distributor for more information.

Delivery Time will be based on the equipment with the longest lead time. Quicker delivery is possible when equipment is separated and ordered according to the delivery category. For example, if an order has one engineered plug-in unit and the remaining units and sections are SC-II - order the engineered unit as a separate item. The SC-II units and sections will ship on the SC-II delivery program and only the engineered unit will have a longer delivery time.

Delivery Program Indications

Delivery programs are indicated in the right column on all pages. PE delivery program is indicated by shaded cells.

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Catalog Number Wiring Type B—Class 1 NEMA Type 1 and Type 1 w/ gasket	Delivery Program
2112B-FA_-__	SC
2112BB-GA_-__	PE-II

Seismic Applications

CENTERLINE 2100 MCCs meet the requirements for Uniform Building Code (UBC) Zone 4 seismic applications and comply with IBC 2000 & 2006 seismic criteria. See Appendix page 246 for more information.

DeviceNet™ Products

Look for DeviceNet capable devices throughout this publication to find units and options that are DeviceNet ready to use in CENTERLINE 2100 MCCs with IntelliCENTER technology. The components used in these units are DeviceNet compatible and ODVA certified. Also, the installation conforms to the rules and guidelines of The Planning and Installation Manual for DeviceNet. IntelliCENTER technology (power supply unit, built-in cabling system, unit cables, etc.) is UL and cUL listed and meets the requirements of a Class 1 power limited circuit (in Canada, Class 1 extra-low-voltage power circuit). Per NEC, this circuit is supplied from a source that has a rated output of not more than 30 Volts and 1000 Volt-Amperes. The power supply unit has an 8A, 24V output and the DeviceNet cabling is rated 8A, 600V. See NEC Article 725 for more detailed information.

Type 2 Protection

Short circuit coordination is defined in IEC 60947-4-1. Type 2 protection (also referred to as Type 2 coordination) is obtainable when the fuses are specified and sized according to publication 100-2.8, *Certified Type 2 Short Circuit Coordination with Allen-Bradley Motor Starters*. Only Type 1 coordination is available, other than on specified fuses and circuit breaker units.

Motor Applications

The Motor Control Center Business has made engineering evaluations for the protective device (circuit breaker or fuse) selection, sizing and setting range based on the protection rules/requirements and motor criteria as stipulated in NEC, NEMA and UL standards (e.g., motor full load currents [FLCs], X/R ratios, lock rotor currents, nominal utilization voltages, etc.). Should the motor application have criteria that deviate from those stated in the aforementioned standards, higher FLC and/or motor inrush currents (greater than 1300% of the nominal FLC) may be experienced (e.g., special motors, non-standard NEMA motors, energy efficient motors, Design E motors, IEC Type N motors, etc.). To address these cases, consult publications 2100-TD001*x*-EN-P and 2100-TD002*x*-EN-P (for circuit breaker applications), publication 2100-TD003*x*-EN-P (for power fuse applications) and the NEC for selection guidance. For further assistance or information, contact your local Rockwell Automation Sales Office.

Documentation

For assembled motor control centers, the customer is supplied with a copy of the motor control center layout and specification (Form 385) and publication 2100-IN012x-EN-P, *CENTERLINE 2100 Motor Control Centers User Manual*. Publication 2100-IN040x-EN-P, *Receiving, Handling and Storing Motor Control Centers*, is attached to the outside packaging of each shipping block. Information on bus torquing is located on the inside of each vertical wireway door. Documentation for individual units consists of a copy of the unit wiring diagram and installation instructions. Field termination and torquing requirements for units are included on the unit wiring diagrams. This documentation may be located in a centralized wiring diagram holder or other location depending on configuration. Manuals for SMC units, AC drive units, PLC units, etc. are included in a centralized location in each MCC containing these products.

Up to three electronic documentation CDs can be also be provided at no additional cost for each MCC. The CD contains the following:

- Equipment list (elevation, layout specification) drawings
- One-line diagrams (if requested)
- Unit wiring diagrams
- Spare parts list
- User and installation manuals for Rockwell Automation products, supplied in the specific motor control center
- Test reporting

For other documentation, refer to publication 2100-CA003*x*-EN-E, *Low Voltage Motor Control Centers Documentation Catalog*. For more information, contact your local Rockwell Automation Sales Office.

Post Shipment Support

- Field Service
- Repair & Modifications
- Code 10 Authorization
- Field Complaints
- Technical Issues
- Warranty Issues
- Domestic and International Renewal Parts Order Services

CENTERLINE 2100 MCC:

Email: RAMCCSupport@ra.rockwell.com
Fax: 1-414-382-4045
Phone: 1-440-646-5800
Select Options 2, 5, 4 for Allen-Bradley Brand Products, Motor Control Centers, Hardware Support

CENTERLINE 2100 MCCs with IntelliCENTER technology:

Email: RAICTechSupport@ra.rockwell.com
Fax: 1-414-382-0505
Phone: 1-440-646-5800
Select Options 2, 5, 3 for Allen-Bradley Brand Products, Motor Control Centers, IntelliCENTER Support

General Terms and Conditions of Sale

A copy of the general terms and conditions of sale for CENTERLINE 2100 Motor Control Centers can be obtained at www.rockwellautomation.com/termsofsale.

Serial Number and Series Letter Information

- From 1980 to 1996, only numbers 600000 to 999999 were used.
- Refer to Series Identification for the implementation date of series letters on sections and units.
- The serial numbers of sections are on the serial plate on the wireway door, for special width sections, the nameplate is located on the section door. On special width sections, the nameplate is located on the section door.
- The serial numbers of units are on the nameplate on the bottom of the units.
- SC-I sections or units will have a series letter after the unit or section catalog number.
- In late 1995, some SC, SC-II and PE orders were entered on PASSPORT.

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Year	CENTERLINE 2100						Bulletin 2400 Series Units
	Factory Order No.		Serial Numbers		Series		
	Start	End	Start	End	Section	Unit	
1971	704403	807499	959060	971209	A	A	None
1972	807500	121409	971210	983266	A	A	None
1973	121500	346999	983267	996532	A	A	None
1974	347000	539999	996535	999946	A	A	None
			A128502	A483339			
1975	540000	719199	A483344	B677442	A	A	None
1976	719200	933199	B677452	C933199	A-B	A-B	None
1977	933200	268699	D933200	D268699	B	B	None
1978	268700	526199	E268700	E526199	B	B	None
1979	526200	748699	F526200	F748699	B-C	B-C	None
1980	748700	898049	G748700	G898049	C	C	None
1981	898050	661299	H898050	H661299	C-D	C-D-E	None
1982	661300	804249	J661300 [1]	J804249 [1]	D-E	D-E-F-G	None
1983	804250	948440	K804250	K948440	E-F	F-G	None
1984	948441	693587	L948441	L693587	F	F-G-H-J	None
1985	693588	849069	M693588	M849069	G	H-J	None
1986	849070	612263	N849070	N612263	G-H-J	H-J-K	None
1987	612264	791331	P612264 [1]	P791331 [1]	J	K	None
1988	791332	991197	R791332 [1]	R991197 [1]	J	K	None
1989	991198	834534	T991198 [1]	T834534 [1]	J	K	None
1990	834535	704948	W834535 [1]	W704948 [1]	J-K	K-M	None
1991	704949	995816	X704949	X995816	K	M	A
1992	995817	732348	Y995817	Y732348	K	M	A-B-C
1993	732349	773410	Z932349	Z773410	K	N	A-C
1994	773411	795559	A773411	A795559	K	N-P	A-C
1995	795560	818971	B795560	B818971	K	N-P	A-C
1996	818972	824311	C818972	C824311	K-L	P-Q	A-C
	NPR624	QBH320	CNPR624	CQBH320			D
1997	824312	N/A	D824312	N/A	L	Q	D
	QBH321	RPH250	DQBH321	DRPH250			
1998	RPH251	TDQ341	ERPH251	ETDQ341	L	R	D
1999	TDQ342	VZM602	FTDQ342	FVZM602	L	R	D
2000	VZM603	XWY931	GVZM603	GXWY931	L	T	D
2001	XWY932	BDPW81	HXWY932	HBDPW81	M	U	D
2002	BDPW82	CBJD56	JBDPW82	JCBJD56	M	U-V	D
2003	CBJD57	CYMV52	KCBJD57	KCYMV52	M	U-V	D
2004	CYNR34	DXSK68	LCYNR34	LDXSK68	M	U-V	D
2005	DXSK69	FYFW68	MDXSK69	MFYFW68	M	X	D
2006	FYFW69	GYTT25	NFYFW69	NGYTT25	M	X-Y	D
2007	GYTT26	JDKT40	PGYTT26	PJDKT40	M	X-Y	D
2008	JDKT41		RJDKT41		M	X-Y	D

[1] Prefix letters I, O, Q, S, U and V are not used.

Series Identification for Sections

This table gives a brief explanation of the series letter changes that have taken place since the original design of the CENTERLINE 2100 Motor Control Center.

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Sections			
Series Letter	**Scope**	**Description of Change**	**Date Implemented in U.S.**
A [1]	—	Original design	February 1971
B [1]	All	Changed terminal blocks	November 1976
C [1]	All	Elimination of external mounting channels	June 1979
D [1]	All	Reverse fed 2192 and 2193	April 1981
E [1]	All	Redesign gasketing	October 1982
F [1]	All	Modified top horizontal wireway pan to accept units with handle interlock in topmost space factor	October 1983
G [1]	42K	42K bracing—incorporates new bus support and cover	January 1985
G [1]	65K	65K bracing—incorporates new bus support and cover	July 1985
H	All	New hinge design	January 1986
J	All	Changed handle, operating mechanism and circuit breaker to Cutler-Hammer Series C, 150A, 250A and 400A frame	October 1986
K	All	Changed to new unit grounding system	May 1990
L	All	Changed to new 600A-1200A circuit breaker operating mechanism	May 1996
M	All	Changed to serpentine DeviceNet cabling system	May 2001

[1] Replacement and renewal parts are no longer supported. Consult MCC Technical Support.

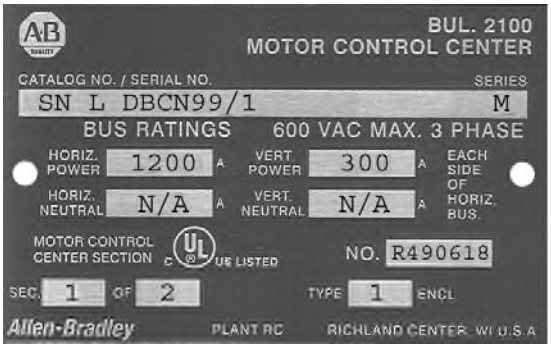
Complete new series units with comparable features and options can be retrofitted into any series of structures as shown in the table on 8.

Section Nameplate Data

When communicating with Rockwell Automation about a particular Allen-Bradley motor control center, the catalog number or serial number and series letter are required to properly identify the equipment. Refer to publication 2100-IN012x-EN-P, *CENTERLINE Motor Control Centers User Manual*, for more information.

Each vertical section has a nameplate (see the figure below) located on the vertical wireway door. On special width sections, the nameplate is located on the section door. Information on the section nameplate includes:)

- Catalog number (serial number
- Series letter of the section
- Maximum bus bar voltage and current rating
- Section location number



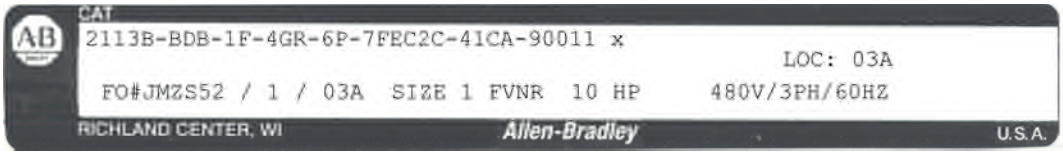
Unit Label Data

When communicating with Rockwell Automation about a particular Allen-Bradley motor control center, the catalog number or serial number and series letter are required to properly identify the equipment. Refer to publication 2100-IN012*x*-EN-P, *CENTERLINE Motor Control Centers User Manual*, for more information.

Each unit has a unit label located inside the unit on the bottom plate. See the figure below. Information on the unit nameplate includes:

- Serial number
- Series letter
- Factory order number
- Catalog string number
- Unit location
- System voltage

Unit Label Data for units shipped on the SC or PE Delivery Programs



NOTE: CAT number for units supplied on the Engineered Delivery Program will have a unique catalog number based on the factory order number. e.g. YULDBCN99/1AF (assembled MCCs) or 2100U-LDBCN99/1 (individually ordered units).

Series Identification for Units

This table gives a brief explanation of the series letter changes that have taken place since the original design of the CENTERLINE 2100 Motor Control Center.

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Units			
Series Letter	**Scope**	**Description of Change**	**Date Implemented in U.S.**
A [1]	—	Original design	February 1971
B [1]	All sizes	Changed terminal blocks	November 1976
C [1]	All sizes	Changed handle mechanism to Cutler-Hammer MCPs	June 1979
D [1]	Size 5	Changed from ITE to A-B 400A disconnect	April 1981
E [1]	All sizes	Changed from Bulletin 709 series K starters to Bul. 500 line starters	April 1981
F [1]	All sizes	Redesign of gasketing, wraparound and unit support pan for Bulletin 700 line	October 1982
G [1]	All sizes	Redesign of gasketing, wraparound and unit support pan for Bulletin 500 line	October 1982
H [1]	All sizes	Changed to new door, CB mechanism and control station	April 1984
J [1]	Size 5	Changed to Bulletin 500 series L	October 1984
	Size 3	Changed to new PCP 100A disconnect	December 1988
	Size 6	Changed to Bulletin 500 series B starters	October 1988
K	Size 1-5 CB units and size 1-2 disc units	Changed handle, operating mechanism and circuit breaker to Cutler-Hammer Series C, 150A, 250A and 400A frame	October 1986
L	21A through 54A	Changed to Bulletin 100 line contactors in 21A, 30A and 45A SMC units and original design 24A, 35A and 54A SMC units	November 1989
M	All sizes	Changed to new unit grounding system and 600A, 800A and 1200A bolted pressure switch	May 1990
N	All sizes	Changed to PCP 200A and 400A disconnect, rerated vacuum Bulletin 2112 and 2113 and new pilot device offerings	January 1993
P	0.5 SF CB units 2103L, 2113, 2193	External auxiliary on circuit breakers	April 1994
Q	All sizes and ratings	New disconnect external auxiliary contacts and new 600A-1200A circuit breaker operating mechanism	May 1996
R	SMC units	Redesign and upgrade of ratings for 24A-500A SMC-2 and SMC-PLUS units. Original design of SMC Dialog Plus units.	August 1997
	1200A 2193	Redesign of 1200A, 2193F and 2193M units	November 1997
	800A 2193	Changed circuit breakers to MDL Frame	November 1998
	225A 2193F	Changed circuit breakers from J Frame to F Frame	October 1999
T	2000A 2193	Changed to Flange Mounted Operating Handle	November 2000
	All sizes	Changed the Bulletin 800MR and Bul. 800T-PS pilot devices to Bulletin 800Es	
	All 1.5 space factor units	Changed unit bottom plate	
U	All except 2100-SD1	Changed to new Bulletin 1497 control circuit transformer	July 2001
	2100-SD1	Changed smoke detector head and base components	November 2001
V	2162Q, 2163Q, 2164Q, 2165Q	Redesign of 240-480V PowerFlex 70 and release of 600V PowerFlex 70	April 2002
	2162R, 2163R, 2164R, 2165R	Original release of PowerFlex 700	Beginning July 2002
	2154H, 2155H	Original release of SMC-3	Beginning November 2002
	2154J, 2155J	Original release of SMC-Flex	Beginning April 2004
	2112, sizes 3, 4 and 5	Redesign to reduced space factor with Class J fuse clip	April 2004
	2162T, 2163T	Original release of PowerFlex 40	September 2004
	2107, 2113, size 3	Reduced space factor	April 2005
X	2162Q, 2163Q	Reduced space factor, changed CCT with integral fuses	April 2005
	All sizes	800F Pilot Devices	August 2005
Y	2154J, 2155J, 108 A and 135 A	Redesign to change units from frame mounted to plug-in design	March 2006

[1] Replacement and renewal parts are no longer supported. Consult MCC Technical Support.

Complete new series units with comparable features and options can be retrofitted for any series of structures as shown in the table on page 8.

Series Lettering—Units and Sections

When using sections in conjunction with units of different series letters, consult the MCC Modifications for Unit and Structure Compatibility table below. All sections in this publication are series letter L; all units are series letter Q and later. In 1982, modifications were made to improve the integrity of the gasketing between the unit door and structure of NEMA Type 1 with gasket and Type 12 sections. This has been accomplished by gasketing the structure instead of the unit door. The change applies to all CENTERLINE 2100 units with series letter F and later and all sections series letter E and later. Also, when series H and later units are installed in a series A through E section in the topmost unit location, a new top horizontal wireway pan is required.

MCC Modifications for Unit and Structure Compatibility

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If Mounted in this Type of Section [1],[2]	Plug-In Units		No Additional Parts Required	Requires Style 1 Unit Support Pan	Requires Style 3 Unit Support Pan	Requires Style 3 Unit Support Pan w/ Bushing	Requires Alternate Top Horizontal Wireway Pan	Requires Door Gasketing Kit	Requires Retrofit Kit [3]	Requires Ground Bus Kit [4]
	Space Factor	Series	—	2100H-UAJ1 See page 216	2100H-UA1 2100H-UJ1 See page 216	2100H-USPA1 2100H-USPJ1 See page 216	2100H-NA4A1 2100H-NA4J1 2100H-NA4A2 2100H-NA4J2 See page 213	2100-GJ10 See page 213	2100H-R1 2100H-R2 See page 217	2100H-GS1 See page 214
NEMA Type 1 Series A-D [5]	1.0 or larger	A-E [5]	✓	—	—	—	—	—	—	—
		F-L [5]	—	✓	—	—	✓ [6]	—	—	—
		M or later [7]	—	✓	—	—	✓ [6]	—	—	✓
NEMA Type 1 Series E-J [5],[8]	0.5 [2]	N or later	—	—	—	✓	—	—	✓	
	1.0 or larger	A-E [5]	—	—	✓	—	—	—	—	[4]
		F-L [5]	✓	—	—	—	—	—	—	—
		M or later [7]	—	—	—	—	—	—	—	✓
NEMA Type 1 Series K or later	0.5 [2]	N or later	✓	—	—	—	—	—	—	—
	1.0 or larger	A-L [5]	—	—	✓	—	—	—	—	[4]
		M or later	✓	—	—	—	—	—	—	—
NEMA Type 1 w/ gasket or Type 12 Series A-D	1.0 or larger	A-E [5]	✓	—	—	—	—	—	—	—
		F-L [5]	—	✓	—	—	✓ [6]	✓	—	—
		M or later	—	✓	—	—	✓ [6]	✓	—	✓
NEMA Type 1 w/ gasket or Type 12 Series E-J [8]	0.5 [2]	N or later	—	—	—	✓	—	—	✓	✓
	1.0 or larger	A-E [5]	—	—	✓	—	—	—	—	[4]
		F-L [5]	✓	—	—	—	—	—	—	—
		M or later	—	—	—	—	—	—	—	✓
NEMA Type 1 w/ gasket or Type 12 Series K or later	0.5 [2]	N or later	✓	—	—	—	—	—	—	
	1.0 or larger	A-L [5]	—	—	✓	—	—	—	—	[4]
		M or later	✓	—	—	—	—	—	—	—

[1] When installing unit in topmost location in vertical section, care must be taken to comply with the National Electrical Code 6'7" (2.0 m) unit handle-to-floor height limitation. A unit operating handle extender (2100H-NE1) is available which provides 3" (76.2 mm) added height flexibility. See page 213 for catalog number.
[2] When CENTERLINE 2100, 0.5 space factor or Space Saving NEMA Starter plug-in units are ordered unassembled or ordered for existing sections, a centralized wiring diagram holder kit (2100H-WDH) should be ordered. See page 214.
[3] Permits installation of 0.5 space factor or Space Saving NEMA Starter plug-in units in existing series E through J CENTERLINE 2100 vertical sections. Refer to page 217 for information.
[4] A ground strap can be used to ground units rather than installing a ground bus. See publication 2100-IN014*x*-EN-P.
[5] Replacement and renewal parts are no longer supported. Consult MCC Technical Support.
[6] Required only if series F or later 1.0 space factor or larger CENTERLINE 2100 unit is installed in topmost location of series A through E vertical sections.
[7] Consult MCC Technical Support for assistance with possible door hinge requirements.
[8] Series E-J sections cannot accommodate 0.5 space factor or Space Saving NEMA Starter plug-in units in bottom-most unit location.

Circuit Breaker Suffix Letter Designation

8

Type of Circuit Breaker	Catalog Number Designation		Circuit Breaker Frame Type									
	Old	New	63A	150A	225A [1]	225A	250A	400A	600A [2]	800A [2]	1200A [2]	2000A [2]
Standard I.C. Instantaneous Trip Only	W	—		—	—	—	—	—	—	—	—	—
Standard I.C. Instantaneous Trip Only	WG	—	GMCP	—	—	—	—	—	—	—	—	—
High I.C. Instantaneous Trip Only	—	CA	—	HMCP MCP	—	—	HMCP MCP	HMCP MCP	HMCP MCP	—	—	—
Instantaneous Trip Only with Current Limiter	WC	—	—	—	—	—	—	—	—	—	—	—
High I.C. Instantaneous Trip with Current Limiter	—	CC	—	HMCP-EL MCP-EL	—	—	—	—	—	—	—	—
Standard I.C. Inverse Time (Thermal Magnetic or Electronic)	WT	CT	—	FDB	FD	JD JD3D	JD JD3D	KD K3D	LD	MDL	—	—
Standard I.C. Inverse Time (Thermal Magnetic or Electronic)	WT, CF	—	—	—	—	—	—	—	—	MDS	—	—
Medium I.C. Inverse Time (Thermal Magnetic or Electronic)	WB	CB	—	FD I3C	—	—	—	—	—	—	ND	—
High I.C. Inverse Time (Thermal Magnetic or Electronic)	—	CM	—	HFD I6C	HFD	HJD JD6D	HJD JD6D	HKD K6D	HLD	HMDL	HND	RD
Inverse Time (Thermal Magnetic) with Current Limiter	WD	CD	—	FDB-LFD I3C-CL	—	—	—	—	—	—	—	—
Extra High I.C. Inverse Time (Thermal Magnetic or Electronic)	—	CX	—	FDC I0C	—	—	JDC JD0D	KDC K0D	LDC	NDC	NDC	—

[1] Unit Series R only.
[2] 600A-2000A electronic trip circuit breakers.