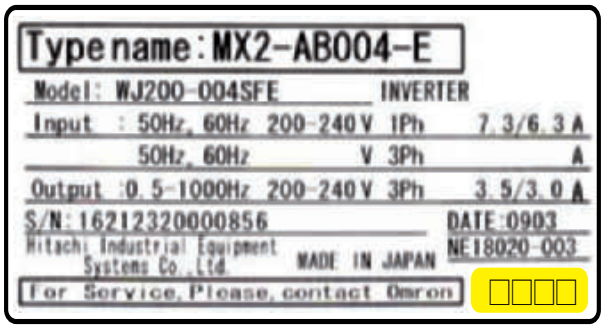
1-1-2 Inverter Support

1-1-2-1 Inverter support for the MX2

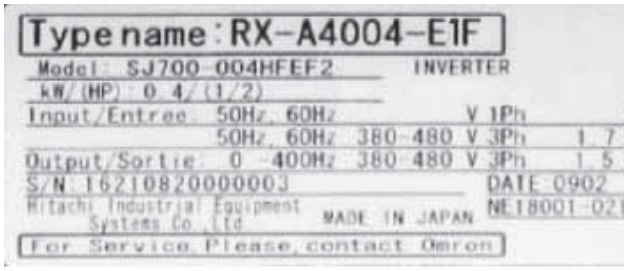
MX2 The 3G3AX-MX2-DRT-E Option Board supports the MX2 Inverter with minimum revision of AAAA. An Inverter that supports the 3G3AX-MX2-DRT-E Option Board can be recognized from the Inverter type label. Please check that your Inverter type label displays revision characters in the bottom right corner where the is displayed in this illustration.



Please note if these characters are absent, your Inverter does not support the 3G3AX-MX2-DRT-E, so please contact your local OMRON representative.

1-1-2-2 Inverter support for the RX

RX The 3G3AX-RX-DRT-E Option Board supports the RX Inverter with minimum revision of RX-□-E1F or RX-□-V1. An RX Inverter that supports the 3G3AX-RX-DRT-E Option Board can be recognized from the Inverter type label.



Note If your RX Inverter has no postfix on type label (e.g.RX-A4004) or the EF postfix (e.g. RX-A4004-EF) the 3G3AX-RX-DRT-E option is not supported, so please contact your local OMRON representative.

1-1-3 Inverter Safety (ISO 13849-1)

MX2 An MX2 Inverter provides a Gate Suppress function to perform a safe stop according to the EN60204-1, stop category 0. The Option Board has been designed not to interfere with this safety function.

Note The 3G3AX-MX2-DRT-E Option Board is not a safety device and does not implement any safety protocols.

1-2 Option Board Specifications

Table 1 Option Board Specification

	Item		Specification
MX2	**Installation MX2**	Unit type	MX2 Series Option Board
		Model	3G3AX-MX2-DRT-E
		Dimensions (W x H x D)	68 x 58 x 45 mm
		Weight	170g (typical)
RX	**Installation RX**	Unit type	RX Series Option Board
		Model	3G3AX-RX-DRT-E
		Dimensions (W x H x D)	80 x 67 x 49 mm
		Weight	170 g (typical)
	Environment	Ambient operating temperature	-10 to 55°C (no icing or condensation)
		Ambient operating humidity	20 to 90%RH
		Ambient storage temperature	-20 to 65°C (no icing or condensation)
		Vibration resistance	5.9m/s2 (0.6G) at 10…55Hz
		Dielectric strength	500 VAC (between isolated circuits)
		Conformance to EMC and Electrical safety standards	EN61800-3: 2004 (2004/108/EC) Second environment, Category C3
			EN61800-5-1: 2007 (2006/95/EC) SELV
		Enclosure rating	IP 20
	DeviceNet Interface	Communications protocol	DeviceNet
		Certification	DeviceNet Conformance Tested
		DeviceNet Profile	AC Drive (0x02)
		Supported connections	Remote I/O: Master-Slave connection Poll Bit-Strobe COS Cyclic Explicit Messages Conform to DeviceNet specifications
		Communications power supply	11 to 25 VDC
		Unit device address range	MAC ID 0 to 63, set with inverter parameter P192
		Baud rates supported	125, 250 or 500 kbps. Automatically detecting baud rate of Master Unit
	DeviceNet Configuration	Default Connection path	Supported, set with inverter parameter P046
		Supported Assemblies	Basic Remote IO (Output assembly 20, Input assembly 70) Extended Speed IO (21, 71) Extended Speed and Torque Control (123, 173) Special IO (100, 150) Extended Control IO (101, 151) Extended Control IO and Multi function IO monitor (101, 153) Flexible Format (139, 159) Extended Speed and Acceleration Control (110, 111) In case the DeviceNet master is configured using user allocation, only the input / output pairs can be configured.
		EDS file	Depending on the Inverter model (see below)

Note 1 The derated- or ambient operating temperature of the Inverter takes precedence over that of the Option Board.

Note 2 In case the Option Board is connected to the Inverter, it is not supported to connect any external devices to the RS485 (Modbus) interface.

MX2 In case the 3G3AX-MX2-DRT-E Option Board is connected to the MX2 Inverter, it is not supported to connect any external devices the RJ45 port (Optional operator port) of the Inverter.

The required EDS file for the Option Board depends on the model of the MX2 or RX inverter.

Table 2 MX2 Device List

MX2

MX2 Model name	Name of EDS file	Product Code
MX2-AB001-E	3G3AX-MX2-DRT-AB001_A2001-E.eds	1880
MX2-A2001-E		
MX2-AB002-E	3G3AX-MX2-DRT-AB002_A2002-E.eds	1881
MX2-A2002-E		
MX2-AB004-E	3G3AX-MX2-DRT-AB004_A2004-E.eds	1882
MX2-A2004-E		
MX2-AB007-E	3G3AX-MX2-DRT-AB007_A2007-E.eds	1884
MX2-A2007-E		
MX2-AB015-E	3G3AX-MX2-DRT-AB015_A2015-E.eds	1886
MX2-A2015-E		
MX2-AB022-E	3G3AX-MX2-DRT-AB022_A2022-E.eds	1887
MX2-A2022-E		
MX2-A2037-E	3G3AX-MX2-DRT-A2037-E.eds	1889
MX2-A2055-E	3G3AX-MX2-DRT-A2055-E.eds	1891
MX2-A2075-E	3G3AX-MX2-DRT-A2075-E.eds	1892
MX2-A2110-E	3G3AX-MX2-DRT-A2110-E.eds	1893
MX2-A2150-E	3G3AX-MX2-DRT-A2150-E.eds	1894
MX2-A4004-E	3G3AX-MX2-DRT-A4004-E.eds	1902
MX2-A4007-E	3G3AX-MX2-DRT-A4007-E.eds	1904
MX2-A4015-E	3G3AX-MX2-DRT-A4015-E.eds	1906
MX2-A4022-E	3G3AX-MX2-DRT-A4022-E.eds	1907
MX2-A4030-E	3G3AX-MX2-DRT-A4030-E.eds	1908
MX2-A4040-E	3G3AX-MX2-DRT-A4040-E.eds	1910
MX2-A4055-E	3G3AX-MX2-DRT-A4055-E.eds	1911
MX2-A4075-E	3G3AX-MX2-DRT-A4075-E.eds	1912
MX2-A4110-E	3G3AX-MX2-DRT-A4110-E.eds	1913
MX2-A4150-E	3G3AX-MX2-DRT-A4150-E.eds	1914

Table 3 RX Device List

RX

RX Model name	Name of EDS file	Product Code
RX-A2004-E	3G3AX-RX-DRT-A2004-E.eds	2149
RX-A2007-E	3G3AX-RX-DRT-A2007-E.eds	2150
RX-A2015-E	3G3AX-RX-DRT-A2015-E.eds	2151
RX-A2022-E	3G3AX-RX-DRT-A2022-E.eds	2152
RX-A2037-E	3G3AX-RX-DRT-A2037-E.eds	2153
RX-A2055-E	3G3AX-RX-DRT-A2055-E.eds	2154
RX-A2075-E	3G3AX-RX-DRT-A2075-E.eds	2155
RX-A2110-E	3G3AX-RX-DRT-A2110-E.eds	2156
RX-A2150-E	3G3AX-RX-DRT-A2150-E.eds	2157
RX-A2185-E	3G3AX-RX-DRT-A2185-E.eds	2158
RX-A2220-E	3G3AX-RX-DRT-A2220-E.eds	2159
RX-A2300-E	3G3AX-RX-DRT-A2300-E.eds	2160
RX-A2370-E	3G3AX-RX-DRT-A2370-E.eds	2161
RX-A2450-E	3G3AX-RX-DRT-A2450-E.eds	2162

Table 3 RX Device List (continued)

RX

RX Model name	Name of EDS file	Product Code
RX-A2550-E	3G3AX-RX-DRT-A2550-E.eds	2163
RX-A4004-E	3G3AX-RX-DRT-A4004-E.eds	2176
RX-A4007-E	3G3AX-RX-DRT-A4007-E.eds	2177
RX-A4015-E	3G3AX-RX-DRT-A4015-E.eds	2178
RX-A4022-E	3G3AX-RX-DRT-A4022-E.eds	2179
RX-A4040-E	3G3AX-RX-DRT-A4040-E.eds	2180
RX-A4055-E	3G3AX-RX-DRT-A4055-E.eds	2181
RX-A4075-E	3G3AX-RX-DRT-A4075-E.eds	2182
RX-A4110-E	3G3AX-RX-DRT-A4110-E.eds	2183
RX-A4150-E	3G3AX-RX-DRT-A4150-E.eds	2184
RX-A4185-E	3G3AX-RX-DRT-A4185-E.eds	2185
RX-A4220-E	3G3AX-RX-DRT-A4220-E.eds	2186
RX-A4300-E	3G3AX-RX-DRT-A4300-E.eds	2187
RX-A4370-E	3G3AX-RX-DRT-A4370-E.eds	2188
RX-A4450-E	3G3AX-RX-DRT-A4450-E.eds	2189
RX-A4550-E	3G3AX-RX-DRT-A4550-E.eds	2190
RX-B4750-E	3G3AX-RX-DRT-B4750-E.eds	2191
RX-B4900-E	3G3AX-RX-DRT-B4900-E.eds	2192
RX-B411K-E	3G3AX-RX-DRT-B411K-E.eds	2193
RX-B413K-E	3G3AX-RX-DRT-B413K-E.eds	2194

1-3 Introduction to DeviceNet

1-3-1 Overview of DeviceNet

DeviceNet is a multi-bit, multi-vendor network that combines control and monitoring on a machine/line-control level and that conforms to DeviceNet open field network specifications. DeviceNet is a member of a family of networks that implements the Common Industrial Protocol (CIP) at its upper layers.

Two types of communications are supported to provide a single point of connection for both control and configuration:

1. Time-critical control remote I/O communications that automatically transfer between the Master Unit/CPU Unit and the remote Slave Units, and
2. Explicit message communications that read/write messages, control operation, or perform other functions to the Slave Units. Message communications are achieved by executing specific instructions from the program in the CPU Unit to which the Master Unit is mounted.

1-3-2 What is the AC Drive profile

Within DeviceNet/CIP standard, multiple device profiles have been defined. Therefore the devices which adhere to a certain device profile are compatible and replaceable in a multi-vendor environment.

The AC Drive device profile (profile code 0x02) supplements the DeviceNet/CIP standard. It defines a unified behaviour and technique to access Inverter and drive device data. All drives supporting the AC Drive profile respond the same way to control instructions.