

J1939-MOT-P1

Device: See supported devices.

Protocol: J1939-MOT-P1

Protocol Version: 1

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1 Introduction

1.1 Purpose of the Document

This document describes the proprietary J1939 PGNs used to communicate with this device.

1.2 Validity of the Document

No constraints defined.

1.3 Supported Devices

The following devices are supported in the specified versions.

Device	from	to
ITB-DC	2.2.0	.-
VariStep3	1.2.0	.-

1.4 Applicable Documents

- SAE J1939-21, revised April 2001
- SAE J1939-71, revised Jun2006

1.5 Definitions of Terms and Abbreviations

ITB-DC	I ntegrated T hrottle B ody – D irect C ontrol
LSB	L east S ignificant B it
MSB	M ost S ignificant B it
MICT	M OTORTECH I ntegrated C onfiguration T ool
PGN	P arameter G roup N umber
PF	P DU F ormat
PS	P DU S pecific
SPN	S uspect P arameter N umber

1.6 Notation Notes

The data page is zero, unless explicitly specified otherwise.

2 J1939 Communication

2.1 Address Configuration

The device source address must be configured via MICT, address claiming is not supported.

- device with even sources address will be treated as device 0.
- device with odd source address will be treated as device 1.

Therefore only two devices, one with even and the other one with odd source address, are supported.

2.2 Bit/Byte Numbering

Unlike SAE J1939-71, bits and bytes in this document are numbered from 7 (MSB) to 0 (LSB) and not from 8 (MSB) to 1 (LSB).

Byte 0								Byte 1								Byte 3								Byte 4							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0

Byte 4								Byte 5								Byte 6								Byte 7							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0

2.3 Data Ranges

According to J1939-71 the transmitted data ranges are defined as follows:

2.3.1 Transmitted Signal Ranges

Common representation of integer values:

Range Name	1 byte	2 byte	4 byte	ASCII
Valid Signal	0x00 to 0xFA	0x0000 to 0xFAFF	0x00000000 to 0xFAFFFFFFF	Latin-1 0x20 to 0x7E
Parameter specific indicator	0xFB	0xFB00 to 0xFBFF	0xFB000000 to 0xFBFFFFFFF	—
Reserved range for future indicator bits	0xFC to 0xFD	0xFC00 to 0xFDFF	0xFC000000 to 0xFDFFFFFFF	—
Error indicator	0xFE	0xFExx	0xFExxxxxx	—
Not available or not requested	0xFF	0xFFxx	0xFFxxxxxx	—

The character set used for text is a restricted Latin-1 (ISO 8859-1) character set. The string end is marked by '*'.

2.3.2 Transmitted Values for Discrete Parameters

Two bits are usually used for this purpose.

Range Name	Transmitted Value
Disabled (off, passive, etc.)	0b00
Enabled (on, active, etc.)	0b01
Error indicator	0b10
Not available or not installed	0b11

2.3.3 Transmitted Values for Control Commands

Two bits are usually used for this purpose.

Range Name	Transmitted Value
Command to disable function (turn off, etc.)	0b00
Command to enable function (turn on, etc.)	0b01
Reserved	0b10
Don't care/take no action (leave function as is)	0b11

3 Used PGNs

The following chapters list and describe the PGNs used to communicate with the device. The Rx/Tx prefix of the PGN name indicates the direction as seen from the device.

Rx Received by the device.

Tx Transmitted by device.

The data page is always 0.

The device must be configured via MICT to use the fieldbus as the external target input. Control Setup
→ Selection → Input → Field bus

Please change the preset PGNs.

3.1 Commands 65302

Description	Value
Direction	Rx/Receive
Data length in bytes	5
Default Priority	6
Parameter Group Number	65302 / 0x0FF16

This PGN is located in proprietary area B. For details see J1939-21.

Some position Values:

-5%	00000000
0%	0BA2E8B9
50%	7FFFFFF3
100%	F45D172D
105%	FFFFFFFF

Byte(.Bit)	Size [Bit]	SPN	Name	Value	Unit and Scaling
0	32		Position Demand in percent	0x00000000 - 0xFFFFFFFF	Value = raw * 2.56113708078887e-8 - 5.0 [%]
4.0	2				not used
4.2	2		Logdata		1 = reset
4.4	2		Control		1 = Shut Down 2 = Reset
4.6	2				not used

3.2 Position 65531

Description	Value
Direction	Tx/Send
Data length in bytes	8
Default Priority	6
Transmission repetition rate	100 [ms]
Parameter Group Number	65531 / 0x0FFFB

This PGN is located in proprietary area B. For details see J1939-21.

Byte(.Bit)	Size [Bit]	SPN	Name	Value	Unit and Scaling
0	8		Current position	0x00 - 0xFF	Value = raw * 0.392157 [%]
1	8		Target position	0x00 - 0xFF	Value = raw * 0.392157 [%]
2	8		Current Temperature	0x00 - 0xFA	Value = raw - 40.0 [°C]
3	8				Allways 0xFF
4.0	1		Fault		1 = common error flag
4.1	1		No Operation		1 = no operation
4.2	1		Supply		1 = low power error
4.3	1		Position		1 = Position error
4.4	1		Temperature Sensor		1 = Sensor failure
4.5	1				Allways 0
4.6	1		Over Temperature		1 = over temperature
4.7	1		Over Current		1 = over current
5	8				Allways 0x00
6	8				Allways 0x00
7	8				Allways 0x00

I Revision History

Date	Name	Comment	Rev.
2025-06-11	Zabe, Volker	Init	
2025-11-24	Zabe, Volker	Approved	1

II Used Tools

Tool	Version
MUSE-Link	0.2
MUSE	1.0
MUSE-J1939	0.2
MUSE-Link	0.2
MUSE-Latex	0.3

III Copyright

English:

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