

Function Block 163

Write I2C Message

Function Description

Transmit a (7-Bit addressing) message to an I2C slave device. Transmission is controlled with the 'Act' input. You can select 'level' or 'edge' triggered activation. The Act input can be inverted.

Multiple FB163 (including FB164) function blocks can be combined for different message formats by using the 'Message Mode' selection. The number of user bytes is selectable from 1 to 7.

Mode 0: Complete Write message consisting of START, CONTROL BYTE, up to 7 data bytes, and STOP.

Mode 1: Partial Write message consisting of START, CONTROL BYTE, and up to 7 data bytes.

Mode 2: Partial Write message consisting of up to 7 data bytes.

Mode 3: Partial Write message consisting of up to 7 data bytes and STOP.

A status output 'Sta' indicates the following:

- 0: Message transmitted
- 1: No ACK received after address tx, usually when slave not present.
- 2: No ACK on data tx.



The screenshot shows a dialog box titled 'frmPopup21'. It contains the following fields and controls:

- Function Block type:** FB163
- Write I2C Message to slave** (text label)
- Execution Sequence Nr.:**
 - Current: 12
 - New: 0
- Parameters:**
 - Slave address (0...127): 1
 - Message Mode (0,1,2,3): 0
 - Byte Count (1...7): 4
 - Active (0=Level, 1=Edge): 1
- Buttons:** Cancel and Accept

Popup Parameters

- Slave address: 0 to 127. Addresses 0, 1 and 2 should not be used.
- Message Mode: Used for composite messages. See above for details.
- Byte Count: Number of data bytes transmitted, from 1 to 7.
- Active: The function block can be continuously executed or when an edge is detected on this input.
- Execution sequence number.

Input/Output and Parameters

| Type | Description | Data Type | Range |
|------------------|--------------------------|-----------|-------|
| Input Act | Input to Enable function | Boolean | 0, 1 |
| Input Byte 1...7 | Data bytes to transmit | BYTE | 0...7 |
| Output Sta | Status indicator | BYTE | 0,1,2 |

Application

Write up to 7 data bytes to I2C slaves using 7-bit addressing. For more information see VPS_P18 application note AN1201A.

Notes

The PIC microcontroller MSSP module is set up for Master mode with a clock rate of 333kHz. To use Function Block 163 in VPS_P18 you must select I2C in the setup section for Port C.