Function Block 164   Read I2C Message

## Function Description

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

A byte made up from the 7-Bit slave address and the R/W (=1) bit is transmitted first. The byte(s) then received from the slave is sequentially packed into the outputs (Byte 1….7) of the Function Block. The number of bytes read from the slave is selectable from 1 to 7.
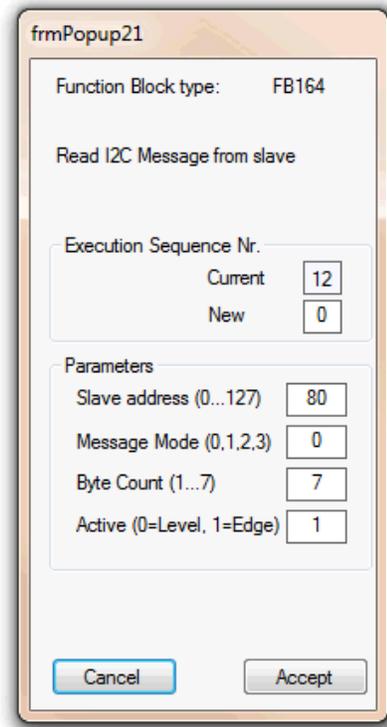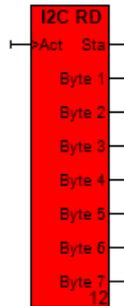
Multiple FB163 (including FB164) function blocks can be combined for different message formats by using the 'Message Mode' selection.

Mode 0: Complete Read message consisting of START, CONTROL BYTE, up to 7 data bytes, and STOP.
Mode 1: Partial Read message consisting of START, CONTROL BYTE, and up to 7 data bytes.
Mode 2: Partial Read message consisting of up to 7 data bytes.
Mode 3: Partial Read 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.

Popup Parameters

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

Input/Output and Parameters

Type	Description	Data Type	Range
Input Act	Input to Enable function	Boolean	0, 1
Output Byte 1…7	Data bytes received	BYTE	0…7
Output Sta	Status indicator	BYTE	0,1

Application

Read up to 7 data bytes from an 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 333 kHz. To use Function Block 164 in VPS_P18 you must select I2C in the setup section for Port C.