Manuals+ — User Manuals Simplified.

**Fronius RI
FB PRO/i
Bus Module
Ip Address**

Fronius RI FB PRO/i Bus Module Ip Address Instruction Manual

Contents

Fronius RI FB PRO/i Bus Module Ip Address

Specifications

- Vendor: Fronius International GmbH
- Device Type: Communication adapter
- Product Code: 1056 decimal (0420 hex)
- Product Name: Fronius FB Pro DeviceNet

Product Information

The RI FB PRO/i RI MOD/i CC-M40 DeviceNet is a communication adapter designed for use with specific robot controllers. It allows for communication between the robot controller and other devices via the DeviceNet protocol.

Product Usage Instructions

Setting Node Address
To set the node address of the bus module:

1. Locate the DIP switch on the interface.
2. Adjust the DIP switch positions to set the node address within the range of 1 to 63.
3. Factory default: all DIP switch positions are set to OFF.

Setting Process Data Width
To set the process data width of the bus module:

1. Refer to the section on setting process data width on page 9.

Data Types and Addressing
The following data types are used:

- UINT16 (Unsigned Integer): Range from 0 to 65535
- SINT16 (Signed Integer): Range from -32768 to 32767

Addresses are specified relatively and absolutely for different signals and functions as detailed in the user manual.

Frequently Asked Questions (FAQ)

- **Q: What is the default node address setting?**

  A: The default node address setting for the bus module is 1.

- **Q: How many stations can be connected to the network?**

  A: The maximum number of stations that can be connected is 64 participants.

General

Safety

WARNING!
Danger from incorrect operation and work that is not carried out properly. This can result in serious personal injury and damage to property.

- All the work and functions described in this document must only be carried out by technically trained and qualified personnel.
- Read and understand this document in full.
- Read and understand all safety rules and user documentation for this equipment and all system components.

Connections and Indicators
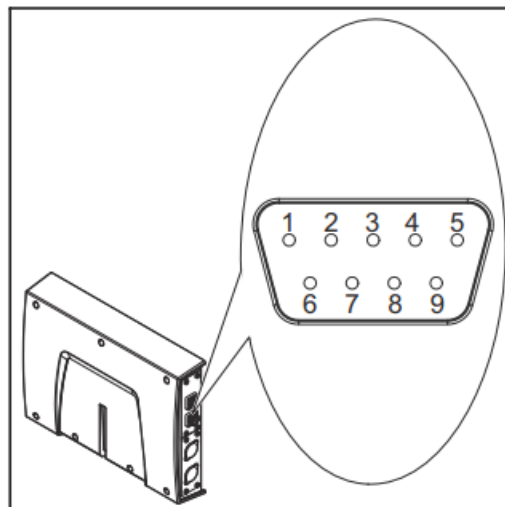
DeviceNet Connection Socket

Pin	Signal	Description
1	–	–
2	CAN_L	CAN low bus line
3	V-	Supply voltage
4	–	–
5	–	–
6	GND	Ground
7	CAN_H	CAN high bus line
8	–	–
9	V+	Supply voltage
Housing = cable shielding: GND is connected internally with the cable shielding. A terminating resistor is located internally between the CAN_L and CAN_H signals.		
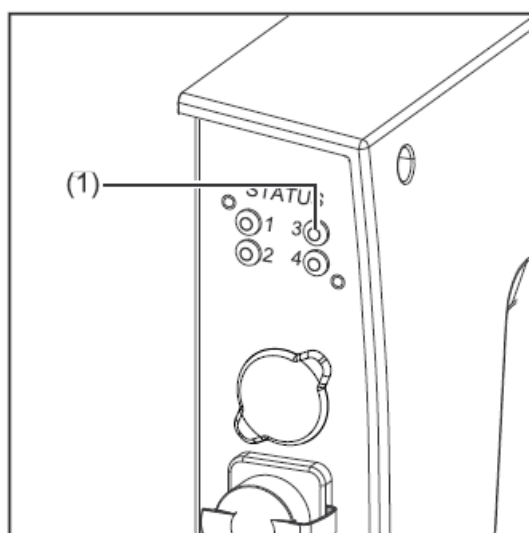
(1) MS LED – module status
Off: No supply voltage
Lights up green: Normal operation
Flashes green: Missing or incomplete configuration, commissioning required
Lights up red: Non-correctable error
Flashes red: Correctable error
Alternates between red and green: Self-test is running
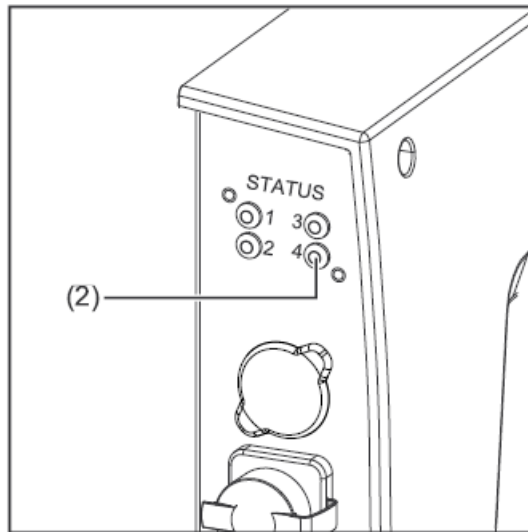
(2) NS LED – network status
Off: Not online or no supply voltage
Lights up green: Online, one or more connections established
Flashes green: Online, no connections established
Lights up red: Critical connection error
Flashes red: Timeout for one or more of the connections
Alternates between red and green: Self-test is running

Data Transfer Properties

Network topology
Linear bus, bus termination on both ends (121 Ohm), stub cables are possible

Medium and maximum bus length
When selecting the cable, plug, and terminating resistors, the ODVA recommendation for the planning and installation of DeviceNet systems must be observed.

Number of stations
Max. 64 participants

Transmission speed
500 kbit/s, 250 kbit/s, 125 kbit/s

Process data width
See section Setting the process data width of the bus module on

Configuration Parameters

In some robot control systems, it may be necessary to state the configuration parameters described here so that the bus module can communicate with the robot.

Parameter	Value	Description
Vendor ID	0534hex (1332dec)	Fronius International GmbH
Device Type	000Chex (12dec)	Communication adapter
Product Code	0420hex (1056dec)	Fronius FB Pro DeviceNet

Product Name Fronius-FB-Pro-DeviceNet(TM)

Setting the Bus Module Node Address

You can set the bus module node address as follows:

1. Using the DIP switch in the interface within the range 1 to 63
    - All positions are set to the OFF position at the factory. In this case, the IP address must be set on the website of the welding machine
2. On the website of the welding machine within the range 1 to 126 (if all positions of the DIP switch are set to the OFF position)
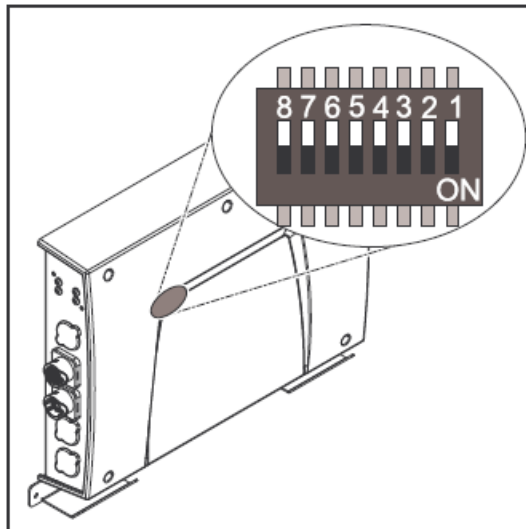
Example for setting the node address of the bus module using the DIP switch in the interface:								
Dip switch								**Node address**
8	**7**	**6**	**5**	**4**	**3**	**2**	**1**	
–	–	OFF	OFF	OFF	OFF	OFF	ON	1
–	–	OFF	OFF	OFF	OFF	ON	OFF	2
–	–	OFF	OFF	OFF	OFF	ON	ON	3
–	–	ON	ON	ON	ON	ON	OFF	62
–	–	ON	ON	ON	ON	ON	ON	63

- The node address is set with positions 1 to 6 of the dip switch.
- The configuration is carried out in binary format. This results in a configuration range of 1 to 63 in decimal format.
- Setting the node address on the website of the welding machine:

Note down the IP address of the welding machine used:

1. On the welding machine control panel, select "Defaults"
2. On the welding machine control panel, select "System"
3. On the welding machine control panel, select "Information" 4 Note down the displayed IP address (example: 10.5.72.13)
4. Access website of the welding machine in the internet browser:
5. Connect the computer to the network of the welding machine
6. Enter the IP address of the welding machine in the search bar of the internet browser and confirm
7. Enter the standard user name (admin) and password (admin)
    - The website of the welding machine is displayed
      Set the bus module node address:
8. On the welding machine website, select the "RI FB PRO/i" tab
9. Enter the desired node address for the interface under "Module configuration"
   For example: 2
10. Select "Set configuration"
11. Select "Restart module"
    - The set node address is applied

Set the Process Data Width of the Bus Module

Setting the process data width of the bus module

Note down the IP address of the welding machine used:

1. On the welding machine control panel, select "Defaults"
2. On the welding machine control panel, select "System"
3. On the welding machine control panel, select "Information" 4 Note down the displayed IP address (example: 10.5.72.13)
   - Open website of the welding machine in the internet browser:
4. Connect the computer to the network of the welding machine
5. Enter the IP address of the welding machine in the search bar of the internet browser and confirm
6. Enter the standard user name (admin) and password (admin)
   - The website of the welding machine is displayed
7. Set the process data width of the bus module:
8. On the welding machine website, select the "RI FB PRO/i" tab
9. Under "Process data", select the desired process data configuration
10. Select "Save"
    - The field bus connection is restarted and the configuration is applied

Input and output signals

Data types

The following data types are used:

- UINT16 (Unsigned Integer) Whole number in the range from 0 to 65535
- SINT16 (Signed Integer) Whole number in the range from -32768 to 32767

Conversion examples:

- for a positive value (SINT16) e. g. desired wire speed x factor 12.3 m/min x 100 = 1230dec = 04CEhex
- for a negative value (SINT16) e. g. arc correction x factor -6.4 x 10 = -64dec = FFC0hex

Availability of input signals
The input signals listed below are available from firmware V2.0.0 of the RI FB PRO/i onwards.

Input signals (from robot to power source)

Address				Signal	Activity/data type	Range	Factor	Process image	
Relative			Absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
0	0	0	0	Welding Start	Increasing			√	√
		1	1	Robot ready	High				
		2	2	Working mode Bit 0	High	See table **Value Range for Working Mode** on page **35**			
		3	3	Working mode Bit 1	High				
		4	4	Working mode Bit 2	High				
		5	5	Working mode Bit 3	High				
		6	6	Working mode Bit 4	High				
		7	7	—					
	1	0	8	Gas on	Increasing				
		1	9	Wire forward	Increasing				
		2	10	Wire backward	Increasing				
		3	11	Error quit	Increasing				
		4	12	Touch sensing	High				
		5	13	Torch blow out	Increasing				
		6	14	Processing selection Bit 0	High	See table **selection** on page **36**Value range Process line			
		7	15	Processline selection Bit 1	High				

Address				Signal	Activity/data type	Range	Factor	Process image	
Relative			Absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
1	2	0	16	Welding simulation	High			√	√
		1	17	*Welding process MIG/MAG:* 1) Synchro pulse on	High				
				Welding process WIG: 2) TAC on	High				
		2	18	*Welding process WIG:* 2) Cap shaping	High				
		3	19	—					
		4	20	—					
		5	21	Booster manual	High				
		6	22	Wire brake on	High				
		7	23	Torchbody Xchange	High				
	3	0	24	—					
		1	25	Teach mode	High				
		2	26	—					
		3	27	—					
		4	28	—					
		5	29	Wire since start	Increasing				
		6	30	Wire sense break	Increasing				
		7	31	—					

WORD	BYTE	BIT	BIT	Signal	Activity/data type	Range	Factor	Standard	Economy
2	4	0	32	TWIN mode Bit 0	High	See table Value Range for TWIN Mode on page 36		√	√
		1	33	TWIN mode Bit 1	High				
		2	34	—					
		3	35	—					
		4	36	—					
		5	37	Documentation mode	High	See table Value Range for Documentation Mode on page 36			
		6	38	—					
		7	39	—					
	5	0	40	—					
		1	41	—					
		2	42	—					
		3	43	—					
		4	44	—					
		5	45	—					
		6	46	—					
		7	47	Disable process-controlled correction	High				

Address				Signal	Activity/data type	Range	Factor	Process image	
Relative			Absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
3	6	0	48	—				√	√
		1	49	—					
		2	50	—					
		3	51	—					
		4	52	—					
		5	53	—					
		6	54	—					
		7	55	—					
	7	0	56	ExtInput1 => OPT_Output 1	High				
		1	57	ExtInput2 => OPT_Output 2	High				
		2	58	ExtInput3 => OPT_Output 3	High				
		3	59	ExtInput4 => OPT_Output 4	High				
		4	60	ExtInput5 => OPT_Output 5	High				
		5	61	ExtInput6 => OPT_Output 6	High				
		6	62	ExtInput7 => OPT_Output 7	High				
		7	63	ExtInput8 => OPT_Output 8	High				
4	8-9	0–7	64–79	Welding characteristic- / Job number	UINT16	0 to 1000	1	√	√
5	10-11	0-7	80-95	*Welding process MIG/MAG:* 1)*Constant Wire:* Wire feed speed command value	SINT16	-327,68 to 327,67[m/min]	100	√	√
				Welding process WIG: 2) Main- / Hotwire current command value	UINT16	0 to6553,5 [A]	10		
				For job-mode: Power correction	SINT16	-20,00 to 20,00 [%]	100		

Address				Signal	Activity/data type	Range	Factor	Process image	
Relative			Absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
6	12-13	0-7	96-111	Welding process MIG/MAG: 1) Arclength correction	SINT16	-10,0 to10,0 [Schritte]	10	√	√
				Welding processing/MAG Standard-Manuel: Welding voltage	UINT16	0,0 to6553,5 [V]	10		
				Welding process WIG: 2) Wire feed speed command value	SINT16	-327,68 to327,67[m/min]	100		
				For job-mode: Arclength correction	SINT16	-10,0 to10,0 [Schritte]	10		
				Welding process Constant Wire: Hotwire current	UINT16	0,0 to6553,5 [A]	10		
7	14-15	0-7	112-127	Welding process MIG/MAG: 1) Pulse-/dynamic correction	SINT16	-10,0 to10,0 [steps]	10	√	√
				Welding processing/MAG Standard-Manuel: Dynamic	UINT16	0,0 to10,0[steps]	10		
				Welding process WIG: 2) Wire correction	SINT16	-10,0 to10,0 [steps]	10		
8	16-17	0-7	128-143	Welding process MIG/MAG: 1) Wire retract correction	UINT16	0,0 to10,0[steps]	10	√	
				Welding process WIG: 2) Wire retract end	UINT16	OFF, 1 to50 [mm]	1		
9	18-19	0-7	144-159	Welding speed	UINT16	0,0 to1000,0[cm/min]	10	√	

Address				Signal	Activity/data type	Range	Factor	Process image	
Relative			Absolu-te					Standard	Economy
WORD	BYTE	BIT	BIT						
10	20-21	0-7	160-175	Process controlled correction		See table Value range for Process controlled correction on page 36		√	
11	22-23	0-7	176-191	*Welding process WIG:* 2) Wire positioning start				√	
12	24-25	0-7	192-207	—				√	
13	26-27	0-7	208-223	—				√	
14	28-29	0-7	224-239	—				√	
15	30-31	0-7	240-255	Wire forward / backward length	UINT16	OFF / 1 to 65535[mm]	1	√	
16	32-33	0-7	256-271	Wire sense edge detection	UINT16	OFF / 0,5to 20,0 [mm]	10	√	
17	34-35	0-7	272-287	—				√	
18	36-37	0-7	288-303	—				√	
19	38-39	0-7	304-319	Seam number	UINT16	0 to65535	1	√	

1. MIG/MAG Puls-Synergic, MIG/MAG Standard-Synergic, MIG/MAG Stan-dard-Manuel, MIG/MAG PMC, MIG/MAG, LSC

2. WIG coldwire, WIG hotwire

Value Range for Working Mode

Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Description
0	0	0	0	0	Internal parameter selection
0	0	0	0	1	Special 2-step mode characteristics
0	0	0	1	0	Job mode

Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Description
0	1	0	0	0	2-step mode characteristics
0	1	0	0	1	2-step MIG/MAG standard manual
1	0	0	0	0	Idle Mode
1	0	0	0	1	Stop coolant pump
1	1	0	0	1	R/L-Measurement

Value range for operating mode

Value Range for Documentation Mode

Bit 0	Description
0	Seam number of welding machine (internal)
1	Seam number of robot (Word 19)

Value range for documentation mode

Value Range for TWIN Mode

Bit 1	Bit 0	Description
0	0	TWIN Single mode
0	1	TWIN Lead mode
1	0	TWIN Trail mode
1	1	Reserved

Value range for documentation mode

Value Range for TWIN Mode

Process	Signal	Activity/data type	Value range configuration range	Unit	Factor
PMC	Arc length stabilizer	SINT16	-327.8 to +327.7 0.0 to + 5.0	Volts	10

Value range for TWIN mode

Value Range for Documentation Mode

Bit 1	Bit 0	Description
0	0	Process line 1 (default)
0	1	Process line 2
1	0	Process line 3
1	1	Reserved

Value range for process line selection

Availability of the output signals
The output signals listed below are available from firmware V2.0.0 of the RI FB PRO/i onwards.

Output Signals (from Power Source to Robot)

Address				Signal	Activity/data type	Range	Factor	Process image	
relative			absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
0	0	0	0	Heartbeat Powersource	High/Low	1 Hz		√	√
		1	1	Power source ready	High				
		2	2	Warning	High				
		3	3	Process active	High				
		4	4	Current flow	High				
		5	5	Arc stable- / touch signal	High				
		6	6	Main current signal	High				
		7	7	Touch signal	High				
	1	0	8	Collision box active	High	0 = collision - on or cable break			
		1	9	Robot Motion Release	High				
		2	10	Wire stick workpiece	High				
		3	11	—					
		4	12	Short circuit contact tip	High				
		5	13	Parameter selection internally	High				
		6	14	Characteristic number valid	High				
		7	15	Torch body gripped	High				

Address				Signal	Activity/data type	Range	Factor	Process image	
relative			absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
		0	16	Command value out of range	High				
		1	17	Correction out of range	High				
		2	18	—					

1	2	3	19	Limitsignal	High			√	√
		4	20	—					
		5	21	—					
		6	22	Main supply status	Low				
		7	23	—					
	3	0	24	Sensor status 1	High	See table **Assignment of Sensor Statuses 1–4** on page **40**			
		1	25	Sensor status 2	High				
		2	26	Sensor status 3	High				
		3	27	Sensor status 4	High				
		4	28	—					
		5	29	—					
		6	30	—					
		7	31	—					
2	4	0	32	—				√	√
		1	33	—					
		2	34	—					
		3	35	Safety status Bit 0	High	See table **Value range Safety status** on page **41**			
		4	36	Safety status Bit 1	High				
		5	37	—					
		6	38	Notification	High				
		7	39	System not ready	High				
	5	0	40	—					
		1	41	—					
		2	42	—					
		3	43	—					
		4	44	—					

		5	45	—					
		6	46	—					
		7	47	—					

Address				Signal	Activity/data type	Range	Factor	Process image	
relative			absolute						
WORD	BYTE	BIT	BIT					Standard	Economy
3	6	0	48	Process Bit 0	High	See table Value Range for Process Bit on page 41		√	√
		1	49	Process Bit 1	High				
		2	50	Process Bit 2	High				
		3	51	Process Bit 3	High				
		4	52	Process Bit 4	High				
		5	53	—					
		6	54	Touch signal gas nozzle	High				
		7	55	TWIN synchronization active	High				
	7	0	56	ExtOutput1 <= OPT_Input1	High				
		1	57	ExtOutput2 <= OPT_Input2	High				
		2	58	ExtOutput3 <= OPT_In put3	High				
		3	59	ExtOutput4 <= OPT_Input4	High				
		4	60	ExtOutput5 <= OPT_In put5	High				
		5	61	ExtOutput6 <= OPT_Input6	High				
		6	62	ExtOutput7 <= OPT_Input7	High				
		7	63	ExtOutput8 <= OPT_Input8	High				
4	8-9	0-7	64-79	Welding voltage	UINT16	0.0 to655.35 [V]	100	√	√
5	10-11	0-7	80-95	Welding current	UINT16	0.0 to 6553.5 [A]	10	√	√
6	12-13	0-7	96-111	Wire feed speed	SINT16	-327.68 to327.67 [m/ min]	100	√	√
7	14-15	0-7	112-127	Actual real value for seam tracking	UINT16	0 to6.5535	10000	√	√
8	16-17	0-7	128-143	Error number	UINT16	0 to65535	1	√	
9	18-19	0-7	144-159	Warning number	UINT16	0 to65535	1	√	

Address				Signal	Activity/data type	Range	Factor	Process image	
relative			absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
10	20-21	0-7	160-175	Motor current M1	SINT16	-327.68 to327.67 [A]	100	√	
11	22-23	0-7	176-191	Motor current M2	SINT16	-327.68 to327.67 [A]	100	√	
12	24-25	0-7	192-207	Motor current M3	SINT16	-327.68 to327.67 [A]	100	√	
13	26-27	0-7	208-223	—				√	
14	28-29	0-7	224-239	—				√	
15	30-31	0-7	240-255	—				√	
16	32-33	0-7	256-271	Wire position	SINT16	-327.68 to327.67[mm]	100	√	
17	34-35	0-7	272-287	—				√	
18	36-37	0-7	288-303	—				√	
19	38-39	0-7	304-319	—				√	

Assignment of Sensor Statuses 1–4

Signal	Description
Sensor status 1	OPT/i WF R wire end (4,100,869)
Sensor status 2	OPT/i WF R wire drum (4,100,879)
Sensor status 3	OPT/i WF R ring sensor (4,100,878)
Sensor status 4	Wire buffer set CMT TPS/i (4,001,763)

Assignment of sensor statuses

Value range Safety status

Bit 1	Bit 0	Description
0	0	Reserve
0	1	Hold
1	0	Stop
1	1	Not installed / active

Value range Safety status

Value Range for Process Bit

Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Description
0	0	0	0	0	No internal parameter selection or process
0	0	0	0	1	MIG/MAG pulse synergic
0	0	0	1	0	MIG/MAG standard synergic
0	0	0	1	1	MIG/MAG PMC
0	0	1	0	0	MIG/MAG LSC
0	0	1	0	1	MIG/MAG standard manual
0	0	1	1	0	Electrode
0	0	1	1	1	TIG
0	1	0	0	0	CMT
0	1	0	0	1	Constantine
0	1	0	1	0	ColdWire
0	1	0	1	1	Dynamic Wire

Value Range for Process Bit

Value Range for Function Status

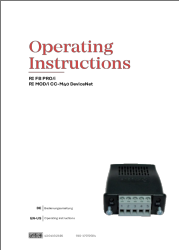| Bit 1	Bit 0	Description
0	0	Inactive
0	1	Idle
1	0	Finished
1	1	Error

value range for function status

spareparts.fronius.com

Fronius International GmbH

- FroniusstraBe 1
- 4643 Pettenbach
- Austria
- **contact@fronius.com**
- **www.fronius.com**

At **www.fronius.com/contact** you will find the contact details of all Fronius subsidiaries and Sales & Service Partners.

Documents / Resources

Fronius RI FB PRO/i Bus Module Ip Address [pdf] Instruction Manual
RI FB PRO i Bus Module Ip Address, RI FB PRO i, Bus Module Ip Address, Ip Address, Address

References

- **Fronius Spare Parts**

- **User Manual**

Manuals+, **Privacy Policy**

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.