

Fronius

**RI MOD
Compact
Com Module**



Fronius RI MOD Compact Com Module Instruction Manual

[Home](#) » [Fronius](#) » Fronius RI MOD Compact Com Module Instruction Manual 

Contents

- [1 Fronius RI MOD Compact Com Module](#)
- [2 Specifications](#)
- [3 Product Usage Instructions](#)
- [4 General](#)
- [5 Documents / Resources](#)
 - [5.1 References](#)
- [6 Related Posts](#)



Fronius RI MOD Compact Com Module



Specifications

- **Product Name:** RI FB PRO/i RI MOD/i CC Ethernet/IP-2P
- **Vendor:** Fronius International GmbH
- **Device Type:** Communication adapter
- **Product Code:** 0320hex (800dez)
- **Image Type:** Standard Image
- **Instance Type:** Producing Instance
- **Consuming Instance:** Consuming Instance
- **Instance Name:** Fronius-FB-Pro-EtherNetIP(TM)

Product Usage Instructions

Setting the IP Address of the Bus Module

The IP address of the bus module can be set using the DIP switches on the interface:

1. Set the IP address within the range of 192.168.0.xx (where xx corresponds to DIP switch positions from 1 to 63).
2. DIP switch settings and corresponding IP addresses:

DIP Switch	IP Address
OFF OFF OFF OFF OFF OFF ON	1
OFF OFF OFF OFF OFF ON OFF	2
OFF OFF OFF OFF OFF ON ON	3
ON ON ON ON ON OFF	62
ON ON ON ON ON ON	63

Data Types and Signal Mapping

The product uses the following data types:

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

Address mapping for input and output signals:

Address	Type	Description
0-7	BIT Signal	Signal Mapping Details

General

Safety

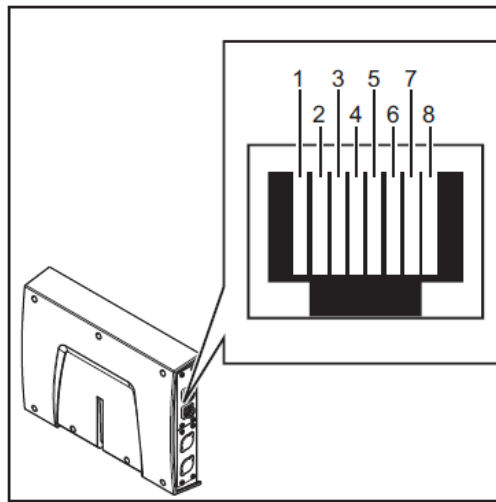
WARNING!

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.

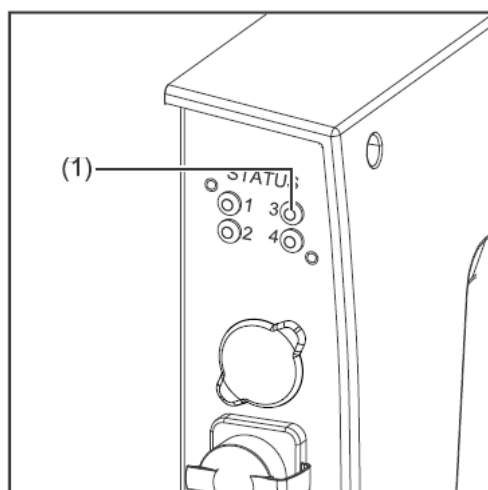
Connections and Displays

1	TX+
2	TX-
3	RX+
6	RX-
4,5,7,	Not normally used; to ensure-
8	re signal completeness, the
	se pins must be Intercon-
	nected and, after passing
	through a filter circuit, must
	terminate at the ground
	conductor (PE).



RJ45 connection

(1) LED MS – Module status	
Off:	No supply voltage
Lights up green:	Controlled by a master
Flashes green (once):	Master not configured or master idle
Lights up red:	Major error (exception state, serious fault, ...)
Flashes red:	Correctable error



(2) LED NS – Network status

Off:

No supply voltage or no IP address

Lights up green:

Online, one or more connections established (CIP category 1 or 3)

Flashes green:

Online, no connection is established

Lights up red:

Double IP address, serious error

Flashes red:

Overrun of time for one or more connections (CIP category 1 or 3)

Data Transfer Properties

Transfer technology

- Ethernet

Medium

- When selecting the cables and plugs, the ODVA recommendation for the plan-ning and installation of EtherNet/IP systems must be observed. The EMC tests were carried out by the manufacturer with the cable IE-C5ES8VG0030M40M40-F.

Transmission speed

- 10 Mbit/s or 100 Mbit/s

Bus connection

- RJ-45 Ethernet / M12

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	0320hex (800dec)	Fronius FB Pro Ethernet/IP-2-Port

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

Image Type	Instance Type	Instance Name	Instance Description	Instance Number	Size [Byte]
Standard Image	Producing Instance	Input Data Standard	Data from power source to robot	100	40

Image Type	Instance Type	Instance Name	Instance Description	Instance Number	Size [Byte]
	Consuming Instance	Output Data Standard	Data from robot to power source	150	40
Economy Image	Producing Instance	Input Data Standard	Data from power source to robot	101	16
	Consuming Instance	Output Data Standard	Data from robot to power source	151	16

Setting the Bus Module IP Address

Setting the Bus Module IP Address You can set the bus module IP address as follows:

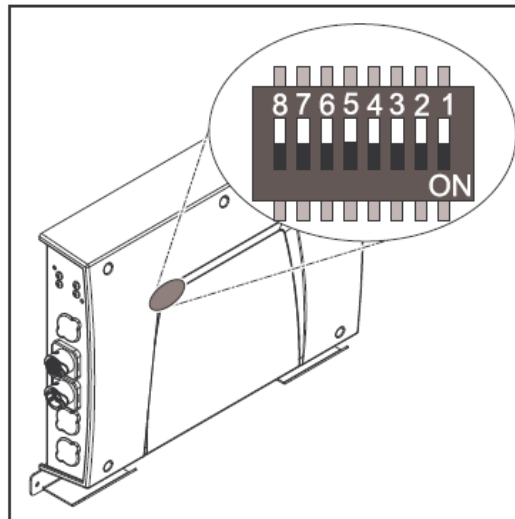
1. Using the DIP switch in the interface within the range defined by 192.168.0.xx (xx = DIP switch setting = 1 to

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 (if all positions of the DIP switch are set to the OFF position)

The IP address is set using DIP switch positions 1 to 6. The configuration is carried out in binary format. This results in a configuration range of 1 to 63 in decimal format.



Example for setting the IP address of the bus module using the DIP switch in the interface:

Dip switch								
8	7	6	5	4	3	2	1	IP address
–	–	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

Instructions for setting the IP 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)

Access the website of the welding machine in the internet browser:

1. Connect the computer to the network of the welding machine
2. Enter the IP address of the welding machine in the search bar of the internet browser and confirm
3. Enter the standard user name (admin) and password (admin)

- The website of the power source is displayed

Set the bus module IP address:

1. On the power welding machine, select the “RI FB PRO/i” tab
2. Enter the desired IP address for the interface under “Module configuration”. For example: 192.168.0.12
3. Select “Set configuration”
4. Select “Restart module”
 - The set IP address is applied

Input and output signals

Data types

The following data types are used:

- **UINT16 (Unsigned Integer)**
 - The whole number in the range from 0 to 65535
- **SINT16 (Signed Integer)**
 - The whole number ranges 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/d ata type	Range	Fact or	Process i mage	
Relative			Absolu- t e					Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						

0	0	0	0	Welding Start	Increa- si ng			ü	ü
		1	1	Robot ready	High				
		2	2	Working mode Bit 0	High	See table Value R ange 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	Increa- si ng				
		1	9	Wire forward	Increa- si ng				
		2	10	Wire backward	Increa- si ng				
		3	11	Error quit	Increa- si ng				
		4	12	Touch sensing	High				
		5	13	Torch blow out	Increa- si ng				
		6	14	Processing selection Bit 0	High	See table Value ra nge Process li- n e selection on pag e 36			
		7	15	Processing selection Bit 1	High				

Address					Process image

Relative			Absolu- t e	Signal	Activity/d ata type	Range	Fact or	Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
1	2	0	16	Welding simulation	High			ü	ü
		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				
				—					
				—					
		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	Increa- si ng				
		6	30	Wire sense break	Increa- si ng				
		7	31	—					

Address				Signal	Activity/d ata type	Range	Fact or	Process i mage	
Relative			Absolu- t e					Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
2	4	0	32	TWIN mode Bit 0	High	See table Value R ange for TWIN Mo de on page 36		ü	ü
		1	33	TWIN mode Bit 1	High				
		2	34	—					
		3	35	—					
		4	36	—					
		5	37	Documentation mode	High	See table Value R ange for Docu- m entation 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 correct ion	High				

Address					Process image

Relative			Absolu- t e	Signal	Activity/d ata type	Range	Fact or	Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
3	6	0	48	—				ü	ü
		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	ü	ü
10				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 to 6553,5 [A]	10		

5	- 1 1	0-7	80-95	<i>For job-mode:</i> Power correction	SINT16	-20,00 to 20,00 [%]	100	ü	ü
---	----------	-----	-------	--	--------	------------------------	-----	---	---

Address				Signal	Activity/d ata type	Range	Fact or	Process i mage	
Relative			Absolu- t e					Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
6	12 – 1 3	0-7	96-111	<i>Welding process MIG/MAG: 1)</i> Arclength correction	SINT16	-10,0 to 10,0 [Schritte]	10	ü	ü
				<i>Welding process MIG/MAG Standard-Manuel:</i> Welding voltage	UINT16	0,0 to 6553,5 [V]	10		
				<i>Welding process WIG: 2)</i> Wire feed speed command value	SINT16	-327,68 to 327,67 [m/min]	100		
				<i>For job-mode:</i> Arclength correction	SINT16	-10,0 to 10,0 [Schritte]	10		
				<i>Welding process Constant Wire:</i> Hotwire current	UINT16	0,0 to 6553,5 [A]	10		

10	20 -2 1	0-7	160-175	Process controlled correction		See table Value range for Process controlled correction on page 36		ü	
11	22 -2 3	0-7	176-191	<i>Welding process WIG: 2)</i> Wire positioning start				ü	
12	24 -2 5	0-7	192-207	—				ü	
13	26 -2 7	0-7	208-223	—				ü	
14	28 -2 9	0-7	224-239	—				ü	
15	30 -3 1	0-7	240-255	Wire forward / backward length	UINT16	OFF / 1 to 65535 [mm]	1	ü	
16	32 -3 3	0-7	256-271	Wire sense edge detection	UINT16	OFF / 0,5 to 20,0 [mm]	10	ü	
17	34 -3 5	0-7	272-287	—				ü	
18	36 -3 7	0-7	288-303	—				ü	
19	38 -3 9	0-7	304-319	Seam number	UINT16	0 to 65535	1	ü	

MIG/MAG, LSC

2. WIG cold wire, 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 robots (Word 19)

The value range for documentation mode

The value range for Process control-led correction

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

The value range for documentation mode

The value range for Process control-led correction

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

The value range for process-dependent correction

Value range Process line selection

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

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

The value range for the TWIN mode

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/d ata type	Range	Factor	Process i mage	
relative			absolute					Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
0	0	0	0	Heartbeat Powersource	High/Low	1 Hz		ü	ü
		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 cabl e 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 in- etern ally	High				
		6	14	Characteristic number valid	High				
		7	15	Torch body gripped	High				

Address				Signal	Activity/d ata type	Range	Factor	Process i mage	
relative			absolute					Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
		0	16	Command value out of range	High				

1	2	1	17	Correction out of range	High			ü	ü	
		2	18	—						
		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 Assign- ment of Sensor Sta- use s 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	—				ü	ü	
		1	33	—						
		2	34	—						
		3	35	Safety status Bit 0	High	See table Value ran- g e 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/d ata type	Range	Factor	Process i mage	
relative			absolute					Sta nda rd	Eco no my
W OR D	BY TE	BIT	BIT						
3	6	0	48	Process Bit 0	High	See table Value Rang e for Process Bit on p age 41		ü	ü
		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_In- put1	High				
		1	57	ExtOutput2 <= OPT_In- put2	High				
		2	58	ExtOutput3 <= OPT_In- put3	High				
		3	59	ExtOutput4 <= OPT_In- put4	High				
		4	60	ExtOutput5 <= OPT_In- put5	High				
		5	61	ExtOutput6 <= OPT_In- put6	High				
		6	62	ExtOutput7 <= OPT_In- put7	High				
		7	63	ExtOutput8 <= OPT_In- put8	High				
4	8- 9	0-7	64-79	Welding voltage	UINT16	0.0 to 655.35 [V]	100	ü	ü
5	10 — 1 1	0-7	80-95	Welding current	UINT16	0.0 to 6553. 5 [A]	10	ü	ü

6	12 -1 3	0-7	96-111	Wire feed speed	SINT16	-327.68 to 327.67 [m/ min]	100	ü	ü
7	14 -1 5	0-7	112-127	Actual real value for seam tracking	UINT16	0 to 6.5535	10000	ü	ü
8	16 -1 7	0-7	128-143	Error number	UINT16	0 to 65535	1	ü	
9	18 -1 9	0-7	144-159	Warning number	UINT16	0 to 65535	1	ü	

Address				Signal	Activity/data type	Range	Factor	Process image	
relative			absolute					Standard	Economy
WORD	BYTE	BIT	BIT						
10	20 -2 1	0-7	160-175	Motor current M1	SINT16	-327.68 to 327.67 [A]	100	ü	
11	22 -2 3	0-7	176-191	Motor current M2	SINT16	-327.68 to 327.67 [A]	100	ü	
12	24 -2 5	0-7	192-207	Motor current M3	SINT16	-327.68 to 327.67 [A]	100	ü	
13	26 -2 7	0-7	208-223	—				ü	

14	28 − ² ₉	0-7	224-239	—				ü	
15	30 − ³ ₁	0-7	240-255	—				ü	
16	32 − ³ ₃	0-7	256-271	Wire position	SINT16	-327.68 to 327.67 [mm]	100	ü	
17	34 − ³ ₅	0-7	272-287	—				ü	
18	36 − ³ ₇	0-7	288-303	—				ü	
19	38 − ³ ₉	0-7	304-319	—				ü	

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 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	DynamicWire

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

The value range for function status



- spareparts.fronius.com
- At www.fronius.com/contact you will find the contact details of all Fronius subsidiaries and Sales & Service Partners. Frequently Asked Questions

How do I troubleshoot LED status indications?

If the LED MS is lit red, it indicates a main error. If it blinks red, it signifies a fixable error. For LED NS, a red light could indicate a double IP address or a severe network error.

What are the default configuration parameters for the bus module?

The default configuration parameters include Vendor ID: 0534hex, Device Type: Communication adapter, Product Code: 0320hex, Product Name: Fronius FB Pro Ethernet/IP-2-Port.

Documents / Resources

	Fronius RI MOD Compact Com Module [pdf] Instruction Manual RI MOD Compact Com Module, RI MOD, Compact Com Module, Com Module, Module
--	---

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.