

Configuring VIPA IM 053IP Ethernet I/P Remote I/O Block

Introduction

This document describes the configuration steps for the VIPA IM 053IP Ethernet I/P Remote I/O Block. **NOTE:** These instructions have been written for the 053-1IP<u>00</u> module. The instructions for 053-1IP<u>01</u> are different and covered in a separate document.

SLIO: Interface modules

Interface modules (IM) form the interface between process level and parent bus system. All control signals are transmitted through the internal backplane bus to the electronics module (EM).

In the case of the interface module the bus interface and power module (PM) are integrated in a single casing. Both the bus interface and the electronics of the connected peripheral modules are supplied with power via the integrated power module.

Characteristics

- Support for various fieldbus systems
- Functional DIP switches for address
- MAC address on the front in plain text
- Electrical isolation between fieldbus and input/output field
- Work on 24VDC (no 120VAC required)
- Up to 64 signal and function modules per interface module





Configuration

1. Setting the IP address of the VIPA IM 053IP will need to be done via the dip switch settings that reside on the module. For this example, the IP Address is going to be 192.168.1.95

053-1IP00 Coupler DIP Switch Layout

Position	Descripti	Description							
1	0 = DHCF	0 = DHCP off							
	1 = DHCF	1 = DHCP on							
	4. Octet ((max. value)	x) of the IP address 1 ue for x = 127)	92.168.1.x						
2	2 ⁰ = 1 (de	fault switched to "1")							
3 4	21 = 2	Setting the IP address via	On delivery the EtherNet/IP cour	oler has the following IP address data:					
	2 ² = 4	web server	Subnet mask:	255 255 255 0					
5	2 ³ = 8		IP address:	ress: 192.168.1.1					
6	24 = 16		With this IP address the integrated web server can be accessed. There the IP address can be changed. The address switch serves for the configuration of the IP address. On delivery the swit 2 (Position 2) is switched to *1*. Here the EtherNet/IP coupler has the following IP address class						
7	$2^5 = 32$ $2^8 = 64$	Setting the IP address via address switch							
	2 0.		 Subnet mask: 255.255.255.0 IP address: 192.168.1.1 						
1 -	 Changes of matic reservence The IP continues, which active whether the section of the	f the IP address only t. Changes during op figuration via the add h are set by EtherNe n all the switches of	take effect on PowerO eration are not recogni. Iress switch is dominar t/IP respectively web set the address switch are	N or an auto- zed! at. Configura- erver, are valid/ in position "0"					

192.168.1.95 Dip Switch Settings





- 2. Configure a PC to be on the 192.168.1 subnet. Make sure the IP address used for the PC does not conflict with any other devices on network.
 - Connect an Ethernet cable between your PC and the VIPA unit
 - Open a web browser and enter address 192.168.1.95 If a web page does not load, ensure you can ping the VIPA unit, and no flashing red lights on the SF indicator are active.

Device (VIPA IM053-11P00) [R] Module 01 (VIPA 021-18F00)	Info	Data	Parameter	Security	IP	Firmware	Configuration
[A] Module 02 (VIPA 021-1BF00) [R] Module 03 (VIPA 021-1BF00) [A] Module 04 (VIPA 022-1HD10) [R] Module 05 (VIPA 022-1BB00)	Config Expor Impor Cho Save Delete	uration M t current co and apply ose File current De e remanent and apply ose File	anagement onfiguration (IP S (IP Settings / De No file chosen vice Parameters t Device Paramet (Module Paramet No file chosen	ettings / Devic vice Paramete / Module Paran vers / Module p ters	e Param rs / Mod meters in aramete	neters / Module F ule Parameters nto remanent me ers	Parameters) Download Upload emory Save Delete Upload



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- 3. Once the webpage has launched, you will need to configure the modules. This will need to be re-done if adding or removing any modules. Typically, the un-configured modules will be highlighted in red text.
 - Select the configuration tab and delete remnant device parameters/module parameters
 - Refresh the web page, you will now notice all the modules will be highlighted in green.
 - Select on the configuration tab and save current device parameters/module parameters into memory.





- 4. After the modules have been configured. The byte size will need to be defined. Within each module the byte size will be located within the data tab. From the **main module *Device (VIPA IM053-1IP00)*** the data tab is going to have the total byte size for the Input/Output data.
 - Note the offset data. This is defined by the assembly instance configuration.
 - This data will take effect when setting up the robot controller.

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Device (VIPA IM053-1IP00) [A] Module 01 (VIPA 021-1BE00)	Info	Data	Paramete	r Securit	у ІР	Firmware	Configuration	
[A] Module 01 (VIPA 021-1BF00) [A] Module 03 (VIPA 021-1BF00) [A] Module 03 (VIPA 021-1BF00) [A] Module 04 (VIPA 022-1HD10) [A] Module 05 (VIPA 022-1BB00)	VIPA IM053-1IP00 - Data							
	Input da	ta						
	Total Wie	dth [byte]	: 6					
	Offset	Width	Value(dec)	Value(hex)				
	3	6						
	Output	data						
	Total Wie	dth [byte]	: 2					
	Offset	Width	Value(dec)	Value(hex)	New Value((hex)		
	0	2	0	0000	0000			
	Apply]						



- 5. The configuration/assembly instance information will need to be configured within maintenance mode of the robot controller. The assembly instance information can be found within the VIPA 053-1IP00 manual under the Assembly Instances section.
 - Hold the MAIN MENU key down on the pendant while powering the controller up to enter Maintenance Mode
 - Login into SAFETY MODE Security
 - Navigate through the following menus, SYSTEM>SETUP>OPTION FUNCTION>Ethernet/IP(CPU BOARD)>DEVICE INFORMATION list. Press SELECT to add a new device. Input the following parameters:

			/	Instance	D 0x1E (30) - Config (400	byte)
		I		Byte	Туре	Content
	DEVICE INFORMATION	8		0	ARRAY of BYTE	ForwardOpen ♦ Deployment of FOR- WARD_OPEN
	No. 1 REGISTRATION NAME	: VIPA		Instance	ID 0x32 (50) to 0x3B (59)	- Setpoints (dynamic) - O→T
FILE	CONNECTION RPI(0->T)	: 50 ms		Byte	Туре	Content
	CONNECTION RPI(T->0)	: 50 ms		0	ARRAY of BYTE	Setpoints (Outputs) - Output Assembly
EX. MEMORY	CONNECTION TIMEOUT CONNECTION TYPE INPUT SIZE OUTPUT SIZE	: 4 times : Exclusive Owner : 6 byte : 2 byte		The value outputs in	of the size is dynamic and byte. & Chap. 4.5 Web se	corresponds to the size of the process image of the erver' page 49 Actual values (dynamic) - $T \rightarrow O$
MOTOPTUS APL.	CONFIGURATION SIZE	: 0 word		Bute		Content
	INPUT INSTANCE	: 60 -		0	LISINT	Header
DISPLAY SETUP	CONFIGURATION INSTANCE	: 30		1	LIINT	Modi en
Aa	INSTANCE NO SIZE	: 1 byte		3	ARRAY of BYTE	Actual values (inputs) - input assembly $(T \rightarrow O$
REMOTE PENDANT				f you do n Input Only	ot request setpoints, to use) on the <i>Originator</i> part.	e this instance ID, you must set the instance ID 0xFE
Main Menu Simple	Henu I/F Panel Mainten	ance mode		i	For small systems with sh dynamic values.	ort cycle times, you should use instances with



- 5.1. Within the detail screen of the Ethernet/IP(CPU Board) select SCANNER to add the VIPA Module in line 01.
 - Register the IP address 192.168.1.95
 - Press SELECT on the VIPA device and select DETAIL. The device information will now be displayed.
 - Press SELECT on the Input Range and define your offset. Once defined, press ENTER to register the device. ***This is the offset data found from within the VIPA configuration page. See image above.*** The offset will need to be implemented to compensate for the status bytes. This will allow the inputs and outputs to start using the same addressing.
 - Press ENTER until you are back to the Ethernet/IP(CPU Board) Screen.





5.2. Once back at the Ethernet/IP (CPU board) settings, the next step will be Re-Configuration of the IO Module.

- Press ENTER twice You will notice the Ethernet/ IP CPU will now reflect the configuration.
- Press ENTER Once to allow for the Modify confirmation dialog box select "YES"

		8		
SYSTEM FILE EX. MEMORY STORY DISPLAY SETUP Aa	IO MODULE ST# DI DO # 06 - - - 07 - - - 08 - - - 09 - - - 10 - - - 11 - - - 12 - - - 13 - - - 14 - - - 15 02000 02000 - 16 - - - 17 - - - 18 - - - 19 - - -	AI AO BOARD NONE NONE NONE NONE NONE NONE NONE NONE Ethernet/IP CPU NONE NONE NONE NONE NONE NONE NONE NONE	SYSTEM FILE EX. MEMORY DISPLAY SETUP Aa	IO MODULE ST# DI DO AI AO BOARD 06 - - - NONE 07 - - - NONE 08 - - - NONE 09 - - - NONE Modify? YES NO 17 - - - NONE 18 - - - NONE 19 - - NONE
Main Menu	Simple Menu	Maintenance mode	Main Menu	Simple Menu Maintenance mode



- 5.3. The VIPA module will need to be allocated within the controller I/O to ensure the device's allocation.
 - For this case the allocation mode will be set to manual. Highlight the detail text. Switch from auto to manual and press ENTER.
 - From the input screen navigate to the VIPA module. Press SELECT and select INSERT if already inserted you will need to select MODIFY. Input the external starting address. These addresses correlate to the general purpose I/O if the ladder has modifications to the selected addressing the external to general I/O may not work. ***ENSURE THE SELECT ADRESSING IS NOT BEING USED!***
 - Ensure the byte size reflects the configuration. *If using the offset this will reflect the total byte size that was configured.*
 - Press ENTER and repeat the above process for allocating the outputs.
 - Once the allocation of the I/O is finished the VIPA unit is complete

			Y					Y	
SYSTEM FILE EX. MEMORY SD TOOL MotoPlus APL. SD PARAMETER PARAMETER	EXTERNAL IO AL ST# (#20010 0 #20060 15 #20070 15	LOCATION(INPUT) CH MAC ID ADDR 0 0 0 0 254 0 0 1 1	BYTE NAME 1 ASF30 1 Ethernet/IP CPU 3 VIPA	SYSTEM FILE EX. MEMORY SD TOOL MotoPius APL. SD PARAMETER EXEMPTION	EXTERNAL IO ST# #30060 15 #30070 15 # 15	ALLOCATION(OU CH MAC ID 0 0254 0 1 0 252	JTPUT) ADDR BYTT 0 1 3	E NAME 1 ASF30 1 Ethernet/II 2 VIPA 1 Ethernet/II	> CPU > CPU
Main Menu	Simple Menu	Maintenance mo	de	Main Menu	Simple Menu	Mainter	nance mode		



- 6. Verify the VIPA Module is communicating. Boot the controller into regular operation. This allows communications to be established to the VIPA module.
 - Login into SAFETY MODE Security
 - Navigate to the COMMUNICATION MONITOR tab. This can be found under the IN/OUT tab.
 - Press SELECT on the Ethernet/IP CPU. The status of the VIPA module should say OK. If not OK, select the device for a detailed communication status with the adapter. Refer to the Ethernet/IP manual HW1483560 section 4.8 for the detailed alarm description.

DATA	EDIT	DISPLAY	UTILITY	12 🗷	M 🖗 🔞	🗣 🕀
JOB	COMML NO	NICATION M S/A TYPE S	IONITOR(DET# STS IPAddi	AIL) ST‡ ress	+15 Ethernet/ REGISTRATION	IP CPU NAME
GENERAL	000 001 002	SCN - ADP EXOWN ADP -	- OK 192.168. -	1. 50	VIPA	
VARIABLE	003 004 005	ADP - ADP - ADP -	2) 5) 2)			
IN/OUT	006	ADP - ADP - ADP -	- -			
ROBOT	009	ADP - ADP -	2 2			
	011	ADP - ADP -	5			
Main Menu	Simp	le Menu	vice.	Please	select register	ed ADP No. and che



Shared Integration Experience

- 7. Test the Inputs from the VIPA module.
 - Navigate to the EXTERNAL INPUT Screen and force the first input from the VIPA Module. External Input 20070 should be on.
 - For this example, the YRC1000 Micro controller with an HC10 DT is being used. Navigate to the GENERAL PURPOSE INPUT screen. Verify the corresponding General Input 49 is on.
 - If not working properly, ensure the device's allocation addressing is correct within the robot's concurrent IO.

DATA	EDIT	DISPLAY	UTILITY	1≥≧⊿≋ख⊑₀⊕♂		DATA	EDIT	DISPLAY	UTILITY	1212	ⅈ₰₡፼₿	0	Þ
JOB GENERAL VARIABLE BOOT IN/OUT IN/OUT ROBOT SYSTEM INF	EXTE LOGI #200 #200 #200 #200 #200 #200 #200 #20	RNAL INPUT CAL NO. 76 1X 00 2X 00 2X 00 3X 00 3X 00 6X 00 5X 00 6X 00 6X 00 00 8X 00 9X 00 00 00 00 1X 00 00 00 00 2X 00 00 00 00 3X 00 00 00 00 5X 00 00 00 00	54 3210 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000 00_0000			JOB GENERAL VARIABL BOOT IN/OUT ROBOT SYSTEM IN SYSTEM IN	E (I (I (I (I (I (I (I (I (I (I (I (I (I	ENERAL PURPO: GROUP IN#0050 #00 IN#0050 #00 IN#0051 #00 IN#0052 #00 IN#0053 #00 IN#0055 #00 IN#0056 #00	SE INPUT IG#007 1 2070 2071 2072 2073 2074 2075 2076 2076 2077		01:HEX.		
											PAGE		
Main Menu S	imple Menu	I/F Panel	:ool fil	e. Using robot without setting tool	int	Main Menu	Simple Mer	nu I/F Panel	g, and	Zg in the	e tool file.	Using robo	: withou [.]



Shared Integration Experience

- 7.1 Test the outputs to the VIPA module.
 - Navigate to the General Purpose Output Screen and force the first output to the VIPA module. This is GENERAL PURPOSE OUTPUT 49. To force the output on, use the INTERLOCK+SELECT keys while on the bullet.
 - For this example, the YRC1000 Micro controller with an HC10 DT is being used. Navigate to the EXTERNAL OUTPUT Screen. The corresponding External Output is 30070. Verify this is on.
 - If not working properly ensure the device's allocation addressing is correct within the robots concurrent IO.

DATA	DISPLAY	UTILITY	12 🗹 🐝 🐻 🕞 🕆 🕷	Þ	DATA	EDIT	DISPLAY	UTILITY	12 🗹 🛪 🗃 🖳 👆 🎸
JOB	GENERAL PURPOS GROUP	E OUTPUT OG#007 1:	DEC. 01:HEX.		JOB DOUT MOVE	EXTI LOG	ERNAL OUTPU	T 354 3210	
GENERAL	OUT#0049 #1 OUT#0050 #1 OUT#0051 #1	0070 • 0071 ○ [0072 ○ [GENERAL	#30 #30 #30	02X 0 03X 0	000_0000 000_0000 000_0000	
VARIABLE B001	OUT#0052 #1 OUT#0053 #1 OUT#0054 #1	0073 〇 0074 〇 0075 〇			VARIABLE B001	#301 = #301 #301 #301	04X 0 05X 0 0 <u>6X</u> 0	000_0000 000_0000 000_0000	
	OUT#0055 #1 OUT#0056 #1	0076 O				#30 #30 #30	07X 0 08X0 09X00	000_0001 000_0000 000_0000	
ROBOT					ROBOT	#30 #30 #30	10X 0 11X 0 12X 0	000_0000 000_0000 000_0000	
SYSTEM INFO					SYSTEM IN	F0 #30 #30 #30	13X 0 14X 0 15X 0	000_0000 000_0000 000_0000	
			PAGE						
Main Menu Simpl	e Menu I/F Panel	:hout set	tting tool info. may result in pr	emature fa	Main Menu	Simple Menu	I/F Panel	ting too	ol info, may result in premature failure of