



PPI CIM Plus – 8 / 16 Universal Channel Analog Interface Module Instruction Manual

[Home](#) » [PPI](#) » PPI CIM Plus – 8 / 16 Universal Channel Analog Interface Module Instruction Manual 

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CIM Plus – 8 / 16 8/16 Universal Channel Analog Interface Module (AC Powered) Operation Manual

Contents

- [1 CIM Plus – 8 / 16 Universal Channel Analog Interface Module](#)
- [2 ELECTRICAL CONNECTIONS](#)
- [3 CONFIGURING COMMUNICATION](#)
- [4 Documents / Resources](#)
 - [4.1 References](#)
- [5 Related Posts](#)

CIM Plus – 8 / 16 Universal Channel Analog Interface Module

This brief manual is primarily meant for quick reference to wiring connections and parameter searching. For more details on Zoperation and application; please log on to www.ppiindia.net

Input Registers (Read-Only Parameters)									
Parameter	MODBUS Address	Values							
Process Value	1561 to 1568 0(8 Channels) 1561 to 1576 (16 Channels)	Value	PV Error Type						
		-32768	Under Range						
		+32752	Over Range						
		+32767	Sensor Open						
Alarm-1 Status	1577	Bit 15 Bit 1 Bit 0 (X = 1, 2, 3, 4) Alarm-X Status for Channel-1 Alarm-X Status for Channel-2 Alarm-X Status for Channel-8							
Alarm-2 Status	1578								
Alarm-3 Status	1579								
Alarm-4 Status	1580								
		<table><tr><th>Bit Value</th><th>Status</th></tr><tr><td>0</td><td>Alarm OFF</td></tr><tr><td>1</td><td>Alarm ON</td></tr></table>	Bit Value	Status	0	Alarm OFF	1	Alarm ON	
Bit Value	Status								
0	Alarm OFF								
1	Alarm ON								
		For 8 Channel Version (CIM Plus-8), ignore Bit-8 to Bit-15							
Ambient Temperature	82	Signed integer values from -30000 to +30000 representing the measured Ambient Temperature through the semi-conductor sensor mounted on the Module. The measured value is always in °C with 0.1 resolution. For example, 30.0°C is represented as 300.							

Holding Registers (Read / Write Parameters)		
Parameter	MODBUS Address	Settings (Default Value)

Input Type	83 to 90 (8 Channels) 83 to 98 (16 Channels)	<table><tr><th>Value</th><th>Type</th></tr><tr><td>0</td><td>Type J Thermocouple</td></tr><tr><td>1</td><td>Type K Thermocouple</td></tr><tr><td>2</td><td>Type T Thermocouple</td></tr><tr><td>3</td><td>Type R Thermocouple</td></tr><tr><td>4</td><td>Type S Thermocouple</td></tr><tr><td>5</td><td>Type B Thermocouple</td></tr><tr><td>6</td><td>Type N Thermocouple</td></tr><tr><td>7</td><td>Reserved TC</td></tr><tr><td>8</td><td>RTD Pt100, 3-wire</td></tr><tr><td>9</td><td>0 to 20 mA</td></tr><tr><td>10</td><td>4 to 20 mA</td></tr><tr><td>11</td><td>0 to 80 mV</td></tr><tr><td>12</td><td>Reserved</td></tr><tr><td>13</td><td>0 to 1.25 V</td></tr><tr><td>14</td><td>0 to 5 V</td></tr><tr><td>15</td><td>0 to 10 V</td></tr><tr><td>16</td><td>1 to 5 V</td></tr></table>		Value	Type	0	Type J Thermocouple	1	Type K Thermocouple	2	Type T Thermocouple	3	Type R Thermocouple	4	Type S Thermocouple	5	Type B Thermocouple	6	Type N Thermocouple	7	Reserved TC	8	RTD Pt100, 3-wire	9	0 to 20 mA	10	4 to 20 mA	11	0 to 80 mV	12	Reserved	13	0 to 1.25 V	14	0 to 5 V	15	0 to 10 V	16	1 to 5 V
		Value	Type																																				
		0	Type J Thermocouple																																				
		1	Type K Thermocouple																																				
		2	Type T Thermocouple																																				
		3	Type R Thermocouple																																				
		4	Type S Thermocouple																																				
		5	Type B Thermocouple																																				
		6	Type N Thermocouple																																				
		7	Reserved TC																																				
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		10	4 to 20 mA																																				
		11	0 to 80 mV																																				
		12	Reserved																																				
		13	0 to 1.25 V																																				
		14	0 to 5 V																																				
		15	0 to 10 V																																				
		16	1 to 5 V																																				
		(Default : 0 to 10 V)																																					
Temperature Units	99 to 106 (8 Channels) 99 to 114 (16 Channels)	<table><tr><th>Value</th><th>Unit</th></tr><tr><td>0</td><td>°C</td></tr><tr><td>1</td><td>°F</td></tr></table>		Value	Unit	0	°C	1	°F																														
		Value	Unit																																				
		0	°C																																				
		1	°F																																				
Conditional Parameter "" (Default : °C)																																							

Signal High	517 to 524 (8 Ch annels) 517 to 532 (16 C hannels)	Conditional Parameter ‘		
		Input Type	Settings	Default
		0 to 20 mA	Signal Low to 20.00	20.00
		4 to 20 mA	Signal Low to 20.00	20.00
		0 to 80 mV	Signal Low to 80.00	80.00
		0 to 1.25 V	Signal Low to 1.250	1.250
		0 to 5 V	Signal Low to 5.000	5.000
		0 to 10 V	Signal Low to 10.00	10.00
		1 to 5 V	Signal Low to 5.000	5.000
Range Low	131 to 138 (8 Ch annels) 131 to 146 (16 C hannels)	Conditional Parameter -30000 to 30000 (Default : 0)		
Range High	147 to 154 (8 Ch annels) 147 to 162 (16 C hannels)	Conditional Parameter -30000 to 30000 (Default : 1000)		
Offset for PV "" fl	163 to 170 (8 Ch annels) 163 to 178 (16 C hannels)	-30000 to 30000 (Default : 0)		
Alarm-1 Type	179 to 186 (8 Ch annels) 179 to 194 (16 C hannels)			

Alarm-2 Type	243 to 250 (8 Channels) 243 to 258 (16 Channels)	Value	Type
		0	None
		1	Process Low
		2	Process High
Alarm-3 Type	307 to 314 (8 Channels) 307 to 322 (16 Channels)	(Default : None)	
Alarm-4 Type	371 to 378 (8 Channels) 371 to 386 (16 Channels)		
Alarm-1 Set-point ' TI	195 to 202 (8 Channels) 195 to 210 (16 Channels)		
Alarm-2 Set-point ' n	259 to 266 (8 Channels) 259 to 274 (16 Channels)		
Alarm-3 Set-point 'l	323 to 330 (8 Channels) 323 to 338 (16 Channels)		
Alarm-4 Set-point ' l	387 to 394 (8 Channels) 387 to 402 (16 Channels)		

Min. to Max. Range specified for the selected Input Type
Refer Table 1
(Default : Min or Max Range depending on the Alarm type)

Parameter	MODBUS Address	Settings (Default Value)						
Alarm-1 Hysteresis ""	211 to 218 (8 Channels) 211 to 226 (16 Channels)	1 to 30000 (Default : 20)						
Alarm-2 Hysteresis 'by'. “	275 to 282 (8 Channels) 275 to 290 (16 Channels)							
Alarm-3 Hysteresis ‘ 1	339 to 346 (8 Channels) 339 to 354 (16 Channels)							
Alarm-4 Hysteresis "" “	403 to 410 (8 Channels) 403 to 418 (16 Channels)							
Alarm-1 Inhibit	227 to 234 (8 Channels) 227 to 242 (16 Channels)	<table><tr><th>Value</th><th>Inhibit</th></tr><tr><td>0</td><td>Disable</td></tr><tr><td>1</td><td>Enable</td></tr></table> (Default : Disable)	Value	Inhibit	0	Disable	1	Enable
Value	Inhibit							
0	Disable							
1	Enable							
Alarm-2 Inhibit	291 to 298 (8 Channels) 291 to 306 (16 Channels)							
Alarm-3 Inhibit	355 to 362 (8 Channels) 355 to 370 (16 Channels)							
Alarm-4 Inhibit	419 to 426 (8 Channels) 419 to 434 (16 Channels)							
Enable Bottom Clipping	435 to 442 (8 Channels) 435 to 450 (16 Channels)	<table><tr><th>Value</th><th>Enable</th></tr><tr><td>0</td><td>No</td></tr><tr><td>1</td><td>Yes</td></tr></table> (Default : No)	Value	Enable	0	No	1	Yes
Value	Enable							
0	No							
1	Yes							
Bottom Clip Value	451 to 458 (8 Channels) 451 to 466 (16 Channels)	-30000 to 30000 (Default : 0)						

Enable Top Clipping	467 to 474 (8 Ch annels) 467 to 482 (16 C hannels)		
		Value	Enable
		0	No
		1	Yes
(Default : No)			
Top Clip Value	483 to 490 (8 Ch annels) 483 to 498 (16 C hannels)	-30000 to 30000 (Default : 1000)	

CONFIGURING COMMUNICATION PARAMETERS			
Parameter	MODBUS Address	Settings (Default Value)	
Modbus Slave ID	1	1 to 247 (Default : 1)	
Baud Rate	2	Value	Baud Rate
		0	2400 bps
		1	4800 bps
		2	9600 bps
		3	19200 bps
		4	38400 bps
		5	57600 bps
		6	115200 bps
		(Default : 9600 bps)	
Parity	3	Value	Parity
		0	None
		1	Even
		2	Odd
		(Default : Even)	

Note 1

Thermocouples (J, K, T, R, S, B, N) and RTD Pt100 (3-wire) Inputs

The process value is always measured in 0.1°C/°F resolution. That is, for example, the value 300 means 30.0°C / °F.

The same should be followed while setting the values for the parameters that are resolution based (like Zero Offset, Alarm Set-point, Alarm Hysteresis, etc.). That is for example, set 300 counts for 30.0°C / °F. DC mA / mV / V Inputs

(Also Refer Appendix A : DC Linear Signal Interface)

The measured PV is a Resolution-less Scaled Value derived using the values for the parameters : Signal Low, Signal High, Range Low and Range High. The parameter 'DC Resolution' holds the desired resolution that can be used to insert appropriate Decimal Place in the scaled PV. For example, if the DC Resolution value is 2 (0.01) then the scaled value of 3000 can be read as 30.00.

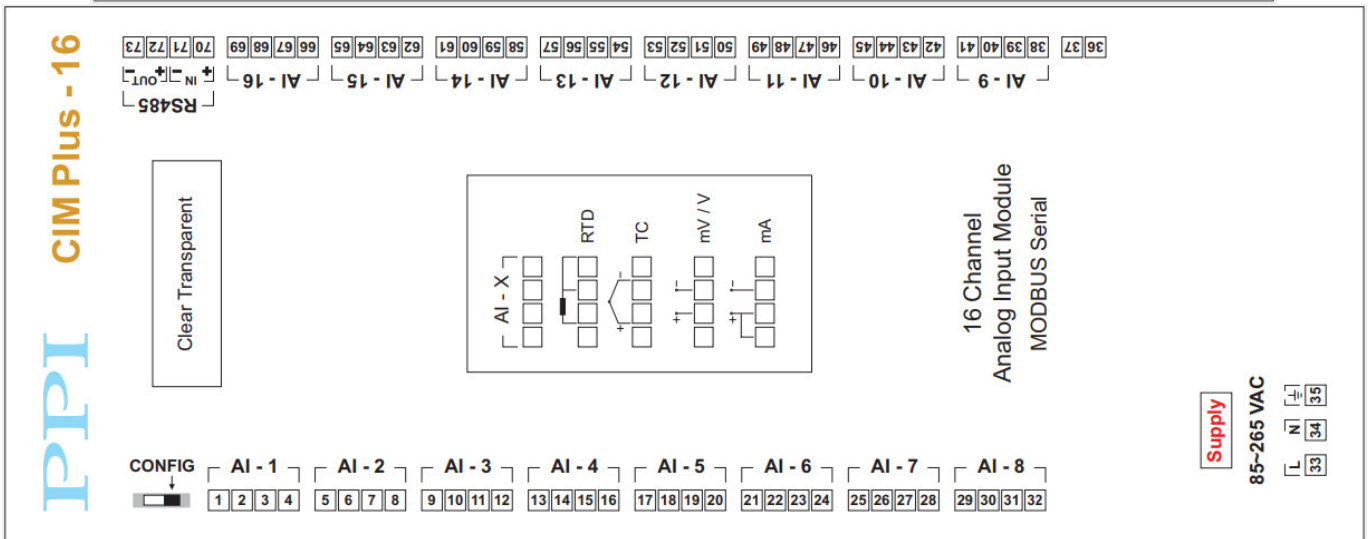
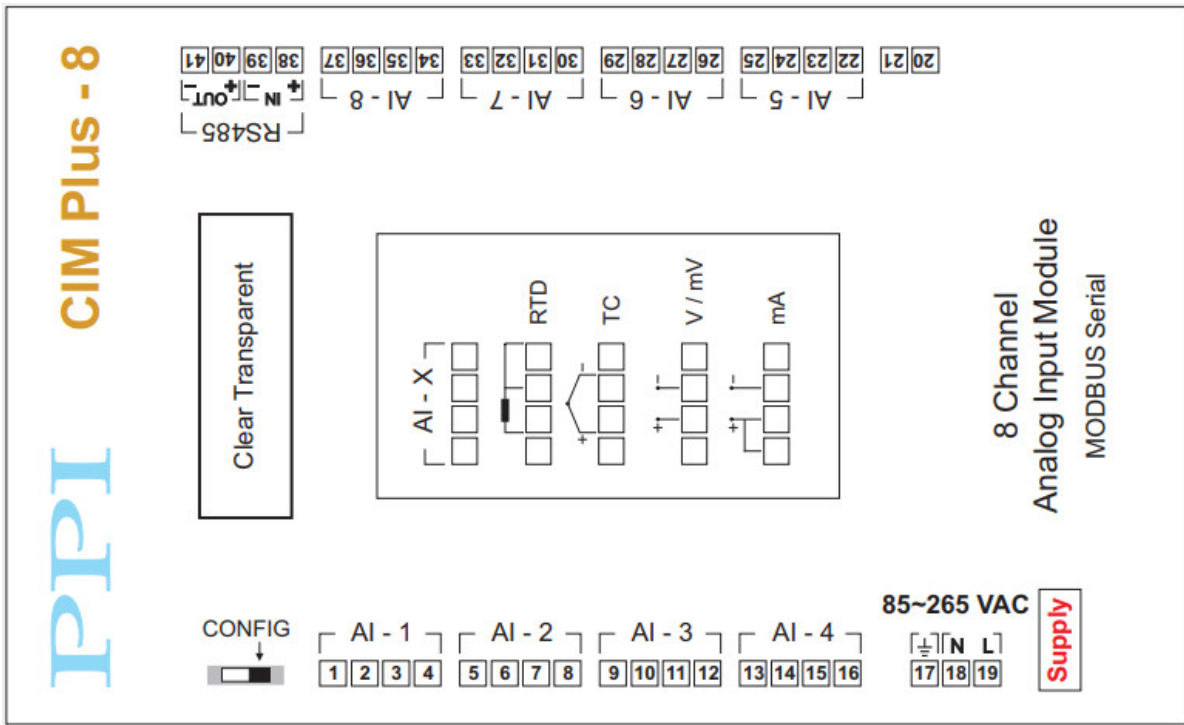
Similarly the corresponding parameters like Zero Offset, Alarm Set-point, Alarm Hysteresis, etc., are also resolution less and, if desired, the parameter value for 'DC Resolution' should be used for appropriate Decimal Place.

Note 2

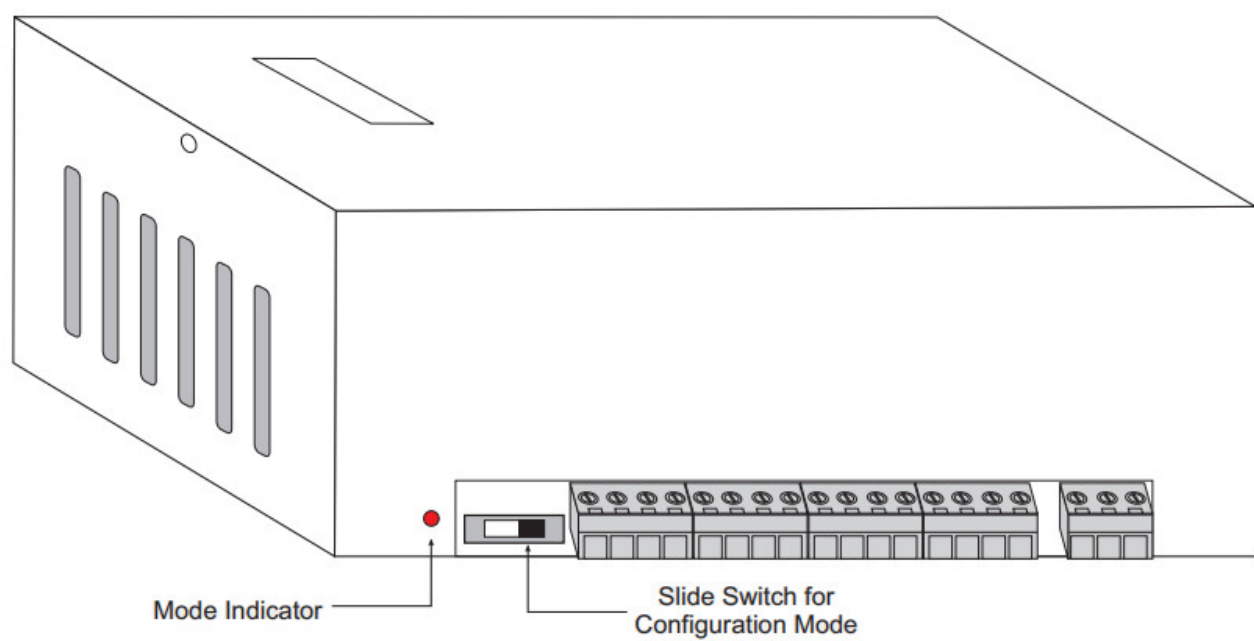
Conditional Parameters are those whose usage depend upon the values set for some other parameters. For example; the parameters 'Signal Low' & 'Signal High' for a selected channel are used only if the input type for the selected channel is DC Input (mV / V / mA). The access to the conditional parameters for Read / Write operation, however, is not restricted.

Table 1		
Input Type	Range (Min. to Max.)	Resolution
Type J Thermocouple	0 to +960.0°C / +32.0 to +1760.0°F	0.1 °C / °F
Type K Thermocouple	-200.0 to +1376.0°C / -328.0 to +2508.0°F	
Type T Thermocouple	-200.0 to +387.0°C / -328.0 to +728.0°F	
Type R Thermocouple	0 to +1771.0°C / +32.0 to +3219.0°F	
Type S Thermocouple	0 to +1768.0°C / +32.0 to +3214.0°F	
Type B Thermocouple	0 to +1826.0°C / +32.0 to +3218.0°F	
Type N Thermocouple	0 to +1314.0°C / +32.0 to +2397.0°F	
3-wire, RTD Pt100	-199.0 to +600.0°C / -328.0 to +1112.0°F	
0 to 20mA DC current	-30000 to 30000 units	1 0.1 0.01 0.001 0.0001 Units
4 to 20mA DC current		
0 to 80mV DC voltage		
0 to 1.25V DC voltage		
0 to 5.0V DC voltage		
0 to 10.0V DC voltage		
1 to 5.0V DC voltage		

ELECTRICAL CONNECTIONS



CONFIGURING COMMUNICATION



Slide Switch Position	 Switch positioned to Left	 Switch positioned to Right
Mode Indicator	OFF	ON
Operation Mode	Normal	Configuration
Communication Parameter Values	User Set values for Module Slave ID, Baud Rate & Parity	Module Slave ID : 1 Baud Rate : 9600 Parity : Even

PPI

101, Diamond Industrial Estate, Navghar,
Vasai Road (E), Dist. Palghar – 401 210.

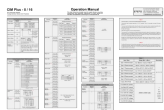
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Documents / Resources

	PPI CIM Plus - 8 / 16 Universal Channel Analog Interface Module [pdf] Instruction Manual CIM Plus- 8 16 Universal Channel Analog Interface Module, CIM Plus - 8 16, Universal Channel Analog Interface Module, Channel Analog Interface Module, Analog Interface Module, Interface Module, Module
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References

- [Factory Automation Products India | Automation Solutions in India](#)