PROFI-8855 – PROFIBUS Remote I/O Unit

Quick Start User Guide

Introduction

This user guide introduces the user how to implement the PROFI-8855 into their applications in a quick and easy way. Therefore, it only provides the basic instructions. For more detail information about the PROFI-8855, please refer to the PROFI-8855 user manual in the ICP DAS product CD or download it from ICP DAS web site.

Power Input

PROFI-8855 Hardware Structure

PROFI-8855 Connector and Pin Assignment



Pin No.	Signal	Meaning
3	B-Line	Receive/Transmit data – plus
5	GND	Power ground of active terminator
6	VP	Power 5 volt of active terminator
8	A-Line	Receive/Transmit data - minus

The PROFIBUS connector is a standard 9-pin D-Sub connector, there are only 4 pins used in PROFI-8855. The pins VP and GND support the 5 volt power to active terminal resistor, and the A-Line and B-Line is the data bus.

Status Indicator

Status Indicator

PROFI-8855 provide three types of status indicators, they are PWR LED (yellow), ERR LED (red) and RUN LED (green).

Status Indicator	Meaning	Recommend solution
ERR ON &	PROFI-8855 is offline	Check the address setting of
RUN OFF	with no valid baud rate	PROFI-8855 and DP-master.
	(offline mode*)	
ERR Flash	PROFI-8855 detects	Check the DP-Master is
(0.1 Sec)	baud rate, but is still	ready to communicate with
	offline.(stop mode*)	PROFI-8855.
ERR Flash	PROFI-8855 Prm is	Check the setting of
(0.5 Sec)	Fault.(Note 1)	PROFI-8855 in the master
		interface and make sure of
		the consistency.
ERR Flash	PROFI-8855's Cfg is	Same as above
(1 Sec)	fault(Note 2)	
ERR ON & RUN	PROFI-8855 is in clear	Sets the DP-Master from
ON	mode*.	clear mode to operation
		mode
ERR OFF & RUN	PROFI-8855 is in	
ON	operation mode*.	
PWR & ERR Flash	PROFI-8855 detect	Find the reason of the fault of
(1 Sec)	module(s) offline	corresponding module.

• Terminating Resistors

In order to minimize the reflection effect of the signal transmission, PROFIBUS device has to fit with an active terminal resistor at both first node and last node. The connection of active terminating resistors is shown in above circuit diagram. The PROFI-8855 doesn't have any terminating

resistors inside. Therefore, users must add the terminator in external. In general, PROFIBUS connector has terminating resistors inside, and there is a switch to control the ON/OFF of the terminating resistors, as shown below.



PROFIBUS Connection

The PROFIBUS interface of the PROFI-8855 is a DB9 female connector. It is recommended to use a standard PROFIBUS cable and connector (DB9 male).

NOTE: Both side of the PROFIBUS cable which connect PROFI-8855 can add a core to reduce noise.



Node Address



The figure shown above is the hexadecimal rotary switch. It dominates the node (station) address of PROFI-8855. The switch which labeled MSB is high nibble of address and the other one is low nibble of address.

According to PROFIBUS specification, the station address which from 0 to 126 is valid, and the address 126 is a special address that supports the remote setting SSA telegram from Class 2 DP-Master. PROFI-8855 uses the value of rotary switch as its address if the address is valid. While the address is invalid, PROFI-8855 will load the pre-saved value in EEPROM. Moreover, if the address is invalid (126) again, PROFI-8855 awaits the SSA telegram and applies it. (Note: If you want to clear the setting stored in EEPROM, you should adjust rotary switch to FF before the power is supplied).

Rotary	Pre-saved address	SSA Telegram	PROFI-8855
Switch(dec)	(EEPROM)		Station Address
0~125	Don't care	No Accept	Rotary Switch
126~254	0~125	No Accept	Pre-saved address (EEPROM)
	126	Accept with	SSA Telegram and
	(default)	address	save address to
		0~125	EEPROM
	127~254	impossible	N/A
255	Clear to 126	Accept with	SSA Telegram and
		address	save address to
		0~125	EEPROM

- EX 1 : MSB => 0, LSB => B, node address of PROFI-8855 => (0*16+11) = 11
- EX 2 : MSB =>7, LSB => 9, node address of PROFI-8855 => (7*16+9) = 121

• PROFI-8855 – Setting and Module Installation

The following steps can help users to set and apply the PROFI-8855.

1. Module Installation:

In the expansion slots, users install the modules, and make sure of correct installation. Notice that address mapping is order by slot id of installed module (from left to right), and the expansion slot that without module will be skipped.

2. Address Setting:

There are two hexadecimal rotary switches in PROFI-8855 panel. They dominate the address of PROFI-8855. The switch labeled LSB is represented the low nibble of the address, and the switch labeled MSB is represented the high nibble of the address. For advance setting, please refer to PROFI-8855 User's Manual.

3. Load GSD file into the DP-Master Configuring software a. Open HW Config

Station Edit Insert PLC View Options Window Help				- 0 3

40.110	^			a x
		End	5000	nt ni
2 CPU 313C-2 DP(1) PROFEBUID(1): DP made: system (1)		Exofile:	Dealart	
22 DP 22 DU6D016		8 📅 17	ROFIBUS DP	^
2.4 Count		89	Additional Field Devices	
			DO	
			Galaway	
		1	CR Competible PROFIEUS DP Sleves	
× 1		1.6	Closed-Loco Controller	
		- ÷ ē	Configured Distions	
			DP V0 slaves	
		1 25	DP/AD-1 DP/PA Link	
	~	80	ENCODER	
	2	÷-	B1200B	
SIMATIC 300 Detica			1 8T 200C	
		60	ET 2002	
nt Designation		80	ET 200/27	
			ET 200L	
OFJDP marter system (1)		1 3 3	ET 200pen	
			ET 200R	
			ET 2005	
			ET 2000	
		1	Function Modules	
			IDENT	
		1 * 9	IPC	~
		Field devi	ces defined via device database files as DP slav	1 L

b. Select Option -> Install GSD files

🛄 Station Edit Insert PLC View	Options Window Help
🗅 🚅 🔓 🛢 🗣 🎒 🖨 🖻	Customize Ctrl+Alt+E
0) UR CPU 313C-2 DP(1) X2 DP 2.2 DI16D016 2.4 Count 3 4 5	Specify Module Configure Metwork Symbol Table Ctrl+Alt+T Report System Error Edit Catalog Profile Update Catalog Install HW Updates Install GSD File
7	Find in Service & Support
	<u>C</u> reate GSD file for I-Device

c. Click "Browse" to select GSD file, and then click "Install"

Install GSD Files		
I <u>n</u> stall GSD Files:	from the directory	
D:work@ROFIBUS%rc@ROFI-885	5\w100\W100\GSD	Browse
File Release Version	1 Languages Default	
PROFI-8855		
Install Show Lo	e Salast éll Domlast éll	
Turner - Sunn Fo	Select VII Deselect VII	
Close		Help

d. Install OK



4. Select I/O modules a. Choose PROFI-8855



b. add I/O module that you want to use.

B HW Config. [SIM # TIC 300 Station (Configuration) - \$7 Pro11			
GU Station Edit Insert PLC View Options Window Help			
			ㅋㅋ
	<u>F</u> ind:	5000	nt ni
2 CPU 313C-2 DP(1) PROFIEUS(1): DP master system (1)	Profile:	Standard	•
2.4 Count 3 0) PEOFL 6 0 7 0		Additional Field Devices ↓ Withhing Devices ↓ DE T2000M ↓ DE T200M ↓ DE T2	
(2) FROFI-5000 Sto [] DP ID Oxler Number / Designation I Address Q.4 8AI PROFI-5017(C) 256.271		PROFI-5051 PROFI-5052 PROFI-5053 PROFI-5055 PROFI-5060 PROFI-5060 PROFI-8055(DPV1) Gateway Compatible PROFIBUS DP Slaves	

5. Set Parameter Data

Wait parameterization is an important step before data exchange. In this stage, DP-Master provides the essential parameter to PROFI-8855 include user parameters and module parameters. Therefore, it must finish this setting before data exchange.

1. User Parameter:

"User parameter" also called "system parameter" is the basic parameters. The number of parameter is fixed regardless of the number of modules. In PROFI-8855, there are two kinds of parameter. They are Byte Order and Diagnosis Repot Period.

Byte-Order Parameter: If your system obeys the INTEL data format, you should select Little-Endian mode; otherwise, you should select Big-Endian mode.

Properties - DP slave 🔀					
General Parameter Assignment					
Parameters	Value				
🖃 🥽 Station parameters					
Device-specific parameters Extended Condex	Big Endian (Motomla, format)				
Hex parameter assignment	The summities soon to many				
□ □ User_Prm_Data (0 to 5)	00,00,00,0A,0B,01				
OK	Cancel Help				

2. Module Parameters:

The most of modules must be initialized before applying them. Module parameters provide information about Operation Code, Data Code or Enable Diagnosis, etc... Please refer to the manual to know more information about these parameters.

Intess / ID		
Parameters	Value	^
🖃 🔄 Station parameters		
🗖 📇 Device-specific parameters		
— 🗐 Channel 0 - Data Range	Volt Inp. Range: +/- 10.0 V	
— 🗐 Channel 0 - Data Format	Engineer-unit format	
— Channel 0 - Diag Enable	Enable	=
— Channel 1 - Data Range	Volt Inp. Range: +/- 10.0 V	
— Channel 1 - Data Format	Engineer-unit format	
- Channel 1 - Diag Enable	Enable	
— 🗐 Channel 2 - Data Range	Volt Inp. Range: +/- 10.0 V	
— Channel 2 - Data Format	Engineer-unit format	
— Channel 2 - Diag Enable	Enable	
- 🗐 Channel 3 - Data Range	Volt Inp. Range: +/- 10.0 V	
🔄 🗐 Channel 3 - Data Format	Engineer-unit format	
- 🗐 Channel 3 - Diag Enable	Enable	
🖃 Channel 4 - Data Range	Volt Inp. Range: +/- 10.0 V	
🔄 🗐 Channel 4 - Data Format	Engineer-unit format	
🔄 Channel 4 - Diag Enable	Enable	~

6. Download Setting and Program into DP-Master

Users load the setting and program into DP-Master, and let it

	go.			
а	. Select S	tation ->	Save an	d Compile
00	Station Edit Insert I	<u>PLC ⊻</u> iew <u>O</u> ptions	<u>W</u> indow <u>H</u> elp	
	<u>N</u> ew Open Open ONLINE <u>C</u> lose	c c	trl+N trl+O	N.
	Save Save and Compile	C	trl+S	: Dr
	Properties		1.	
	Import <u>E</u> xport			
	Consistency C <u>h</u> eck Check CiR Compatib	ility C	trl+Alt+K trl+Alt+F	

b. Select PLC -> Download



After finishing the procedure, DP-Master will establish the connection with PROFI-8855 and execute program automatically. RUN_LED indicates the status of connection that you can observe.