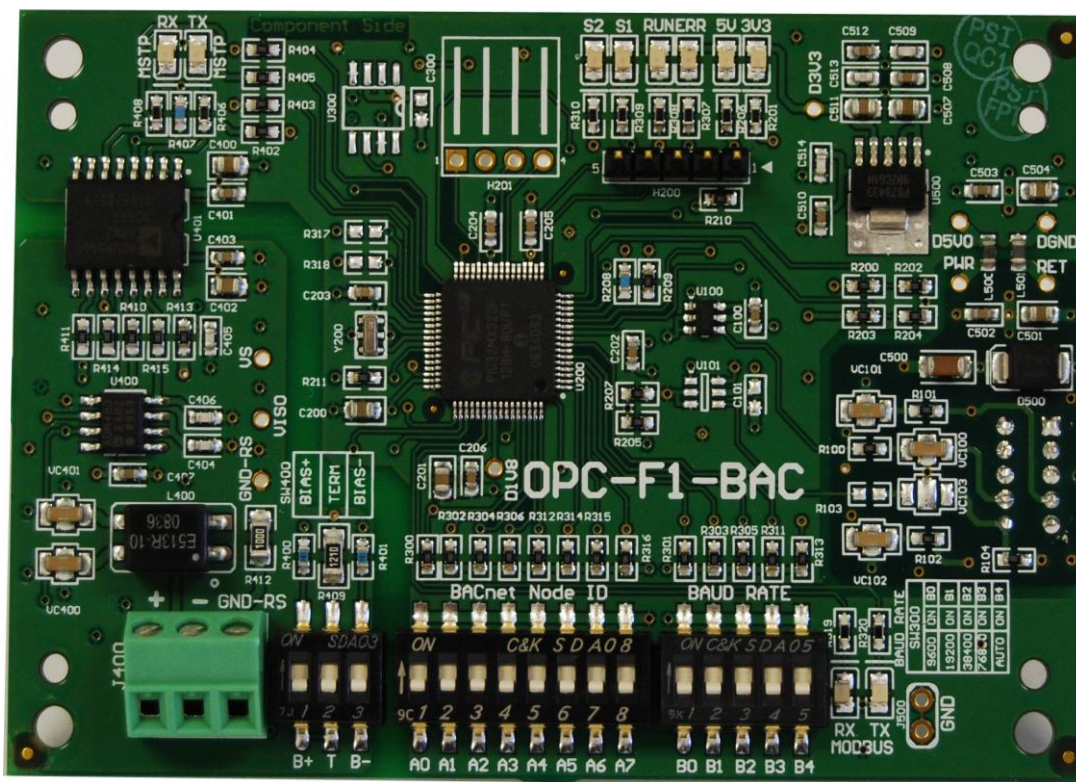


Fuji BACnet Start-Up Guide for the Fuji Electric FRENIC Eco VFD



Description

Explains the Functioning and Set-up of the BACnet MSTP Communications Module as a supplement to the Fuji Electric Frenic-Eco VFD.

The instructions are effective for the above as of March 2010

Instruction Manual Part Number: OPC-F1-BAC

V 5.17

Rev 3

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1 EQUIPMENT SET-UP

1.1 Supplied equipment

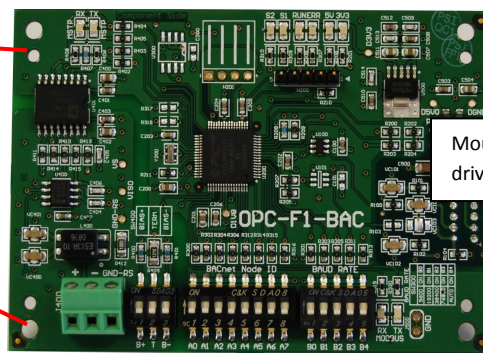
- BACnet MSTP Communications Module, Part Number OPC-F1-BAC

1.2 Installing the Card

- Remove VFD cover.



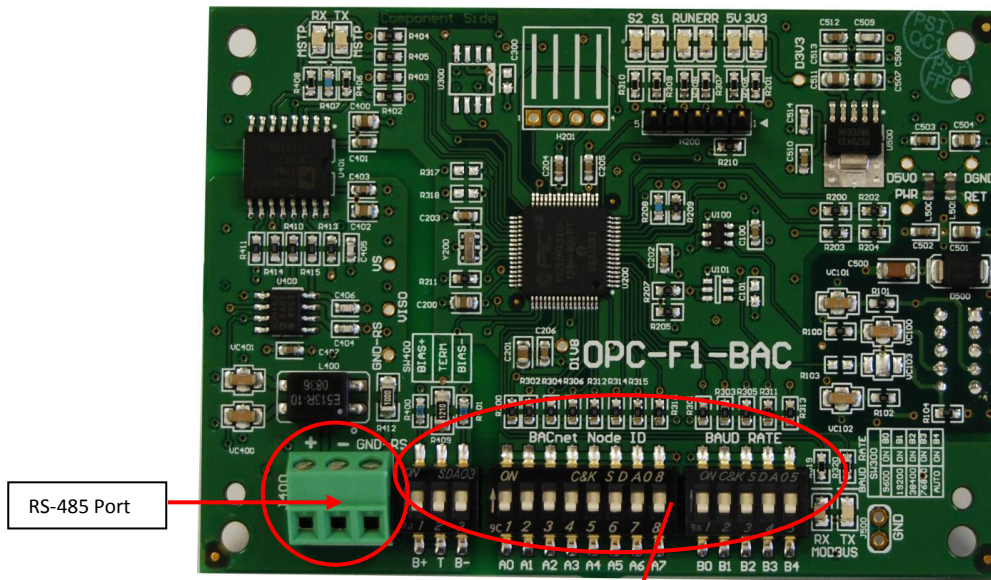
- Install BACnet MSTP com card into option port A of the VFD. This may require the removal of the OPC-F1-RS option card.



Mount BACnet Card on the drive

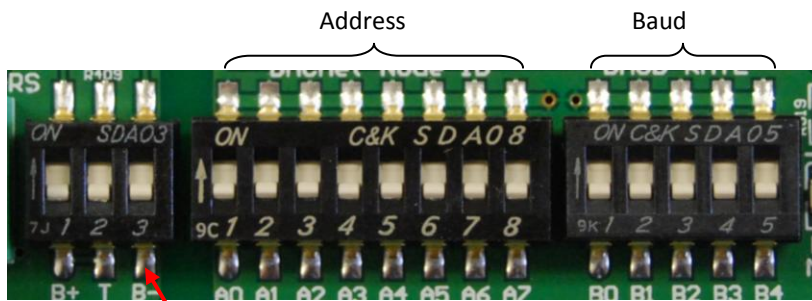


BACnet Card



RS-485 Port

Dipswitches



Terminating and bias resistor dipswitches.

- Set the BACnet device instance and baud rate using the address dipswitches. (Refer to Appendix A.1)
- If required, set the terminating resistor and bias resistor dipswitches on.
- Connect the RS-485 port of the com card to the BACnet MSTP network.



- Re-install the VFD cover.
- Power up the VFD.

2 OPERATION

2.1 Steps to set up communication with the Driver.

- Press the “PRG” button.
- Scroll to “1. Data Set Press FUNC/DATA”
- Scroll till the screen says Y01
- Press FUNC key.
- To set a parameter, scroll to the desired parameter, press FUNC, scroll to the desired selection and press FUNC again. To cancel press PRG.
- The settings are as follows:

Y01	Y02	Y03	Y04	Y05	Y06	Y07	Y08	Y09	Y10
1	0	2	4	0	0	1	0	0.01	0

Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18	Y19	Y20	Y98	Y99
1	0	2	4	0	0	1	0	0.01	0	0	0

- After setting these correctly, restart the drive.
- After the restart, the MODBUS RX and TX lights should be flashing.

3 USING BACNET/MSTP

This section describes the points that are available through the BACnet/MSTP interface.

3.1 Binary Points

BACnet Object_Name	BACnet Object Type	Object Instance	Active Text	Inactive Text	R/W
Forward_Command	BV	0	Forward	Inactive	R/W
Reverse_Command	BV	1	Reverse	Inactive	R/W
Alarm_Reset	BV	2	Reset	Inactive	R/W
Forward_Rotation	BV	3	Forward	Inactive	R
Reverse_Command	BV	4	Reverse	Inactive	R
DC_Braking/Pre_exiting	BV	5	Braking	Inactive	R
Inverter_Shut_Down	BV	6	Shutdown	Inactive	R
Braking	BV	7	Braking	Inactive	R
DC_Voltage_Est	BV	8	Established	Inactive	R
Voltage_Limiting	BV	9	Limiting	Inactive	R
Current_Limiting	BV	10	Limiting	Inactive	R
Acceleration	BV	11	Accelerating	Inactive	R
Deceleration	BV	12	Decelerating	Inactive	R
Alarm_Relay	BV	13	Alarm	Inactive	R
Communications_Act	BV	14	Effective	Inactive	R
Busy	BV	15	Busy	Inactive	R
X1_Communications	BV	16	Active	Inactive	R/W
X2_Communications	BV	17	Active	Inactive	R/W
X3_Communications	BV	18	Active	Inactive	R/W
X4_Communications	BV	19	Active	Inactive	R/W
X5_Communications	BV	20	Active	Inactive	R/W
XF_Communications	BV	21	Active	Inactive	R/W
XR_Communications	BV	22	Active	Inactive	R/W
X1_Final	BI	0	Active	Inactive	R
X2_Final	BI	1	Active	Inactive	R
X3_Final	BI	2	Active	Inactive	R
X4_Final	BI	3	Active	Inactive	R
X5_Final	BI	4	Active	Inactive	R
XF_Final	BI	5	Active	Inactive	R
XR_Final	BI	6	Active	Inactive	R
Y1_Communications	BO	0	Active	Inactive	R/W
Y2_Communications	BO	1	Active	Inactive	R/W
Y3_Communications	BO	2	Active	Inactive	R/W
Y5_Communications	BO	3	Active	Inactive	R/W
30_Communications	BO	4	Active	Inactive	R/W

3.1.1 Notes applicable to the binary points:

- BV 16-22 is the state of the X1-XR in the communications register(S06) where BI 0-6 contains the state of X1-XR as sent to the drive. To change the value sent to the drive by communications, the new value must be written to the communications registers (BV 16-22).
- Typically either BV22 OR BI6 will be used, they won't both be used at the same time. BV14 will be used in case X1 needs to be controlled through communications or BI0 will be used to monitor the value of the terminal.

3.2 Analog points

BACnet Object Name	BACnet Object Type	Object Instance	Units	R/W
Frequency_Command_Setpt	AV	0	Hz	R/W
PID_cmd	AV	1	%	R/W
Frequency_Command	AV	2	Hz	R
Output_Torque	AV	3	%	R
Input_Power	AV	4	%	R
Output_Current	AV	5	%	R
Output_Voltage	AV	6	V	R
Latest_Alarm	AV	7		R
Operation_Time	AV	8	h	R
DC_Link_Voltage	AV	9	V	R
Inverter_Air_Temp	AV	10	°C	R
Inverter_Heat_Sink_Temp	AV	11	°C	R
PID_Feedback	AV	12		R
PID_Output	AV	13		R
S_Parameter_Select	AV	14		R/W
S_Parameter_Value	AV	15		R/W
M_Parameter_Select	AV	16		R/W
M_Parameter_Value	AV	17		R
F_Parameter_Select	AV	18		R/W
F_Parameter_Value	AV	19		R/W
E_Parameter_Select	AV	20		R/W
E_Parameter_Value	AV	21		R/W
C_Parameter_Select	AV	22		R/W
C_Parameter_Value	AV	23		R/W
P_Parameter_Select	AV	24		R/W
P_Parameter_Value	AV	25		R/W
H_Parameter_Select	AV	26		R/W
H_Parameter_Value	AV	27		R/W
H_Parameter_Select	AV	28		R/W
H_Parameter_Value	AV	29		R/W
Output_Current_Real	AV	30		R
Universal_AO	AO	0		R/W

3.2.1 Notes applicable to the analog points:

- The Parameter_Select AV's are used to enter the number of the parameter required from the specific function group, ex. AV14 set to 5 to read S05.
- The Parameter_Value AV's are used to read/write the value of the parameter specified by the Parameter_Select AV, ex. if AV14 is set to 5, AV15 will contain the value of S05. Writing to AV15 will set a new value for S05.
- If a requested parameter is not supported by the Eco, ex AV14 is set to 4 to read S04, AV15's reliability will be set to fault and a value of zero will be returned.

Appendix A. REFERENCE

Appendix A.1. Address Dipswitch Settings

A7	A6	A5	A4	A3	A2	A1	A0	Address
Off	Off	Off	Off	Off	Off	Off	Off	37000
Off	Off	Off	Off	Off	Off	Off	On	37001
Off	Off	Off	Off	Off	Off	On	Off	37002
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On	On	Off	On	On	On	Off	On	37221

A7	A6	A5	A4	A3	A2	A1	A0	Address
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On	On	Off	On	On	On	On	On	37223
On	On	On	Off	Off	Off	Off	Off	37224
On	On	On	Off	Off	Off	Off	On	37225
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On	On	On	On	On	On	On	Off	37254
On	On	On	On	On	On	On	On	37255

Appendix A.2. Baud Rate Dipswitch Settings

B4	B3	B2	B1	B0	Baud
Off	Off	Off	Off	On	9600
Off	Off	Off	On	Off	19200
Off	Off	On	Off	Off	38400
Off	On	Off	Off	Off	76800
On	Off	Off	Off	Off	Auto