

BAC-DIO4 BACnet MS/TP Digital Input / Output Module, Wall Mounted

BAC-DIO4 has been designed to be a compact wall mounted BACnet MS/TP input and output module.

The module has 2 volt-free digital inputs for measurements e.g. for windows, occupancy sensors and so on.

The module has also 2 digital outputs, 24Vac triacs switching the plant items on/off.

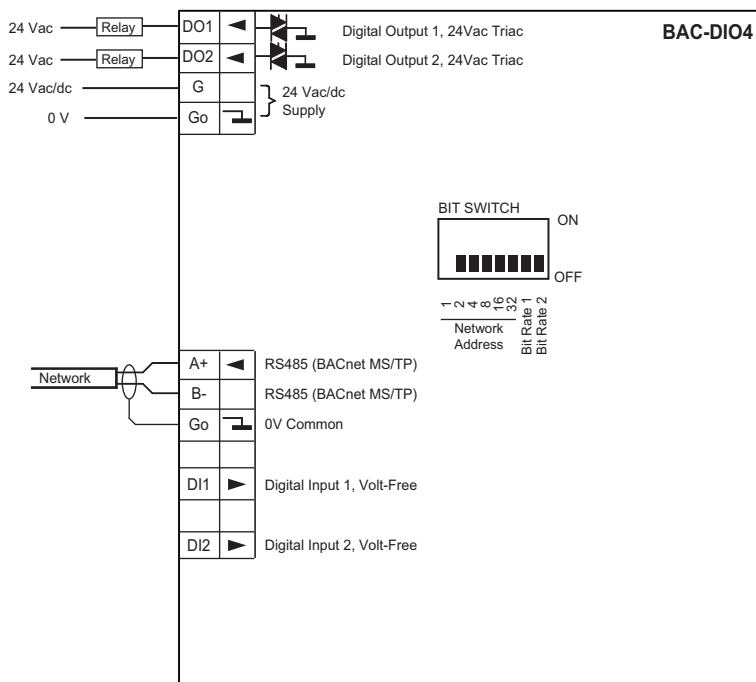
The module supports BACnet MS/TP communications with most commonly used baud rates and parity settings. The module also supports BACnet device and object discovery allowing fast and efficient programming.



Model Type	Model	Description
	BAC-DIO4	BACnet MS/TP Digital Input / Output Module, 2DI, 2DO
Technical Data		
Power Supply	Power supply	24Vac/dc -10%/+15%
Signal Outputs	Digital Outputs	2 x 24Vac Triacs; 1A maximum per channel; requires 24Vac Power Supply
Signal Inputs	Digital Inputs	2 x Volt-Free Contact, Impedance <1KOhm Pulse Counting: Max 25Hz, Min Pulse Length 20mA (Volatile)
Communication	BACnet Communications	
	Protocol	BACnet MS/TP
	Interface	RS485; maximum 63 devices
	MAC Addressing	0..63 via a bit switch; 0..247 via tool / network
	Communication	9k6/19k2/38k4/76k8 Baud; Parity None/Even/Odd, 1 or 2 Stop Bits (baud rate adjustable through bit switch)
Connections	Terminal Connections	Solid and Stranded Cable; 55° Angle for Wiring Maximum Size: 0.05 to 1.5mm ² (EN ISO) / 14 to 30 AWG (UL) Rising Clamp: Size 2.5 x 1.9mm
Environmental Conditions	Operating	
	Temperature	0°C...+50°C (32..122°F)
	Humidity	0...95%rh (non-cond.)
	Storage	
	Temperature	-30°C...+70°C (-22..158°F)
	Humidity	0...95%rh (non-cond.)
Standards	CE Conformity	CE Directive 2004/108/EY EN61000-6-3: 2001 (Generic Emission) EN61000-6-1: 2001 (Generic Immunity).
	Degree of Protection	IP20

Housing	Housing Material	ABS Plastics, Self Extinguishing
	Mounting	Wall or Junction Box Mounting, RAL9010 Pure White
	Dimensions	W86 x H120 x D29mm
	Weight	180g

Wiring Terminals



DO1	Digital Output; 24Vac Triac Switching to 0V; max. 2A
DO2	Digital Output; 24Vac Triac Switching to 0V; max. 2A
G	24Vac/dc Power Supply
Go	0V Common
A+	RS485 A+ Connection (BACnet)
B-	RS485 B- Connection (BACnet)
Go	0V Common
DI1	Digital Input; Volt-Free, Max 25Hz, Min Pulse Length 20mS
DI2	Digital Input; Volt-Free, Max 25Hz, Min Pulse Length 20mS

Digital Input Pulse Counting

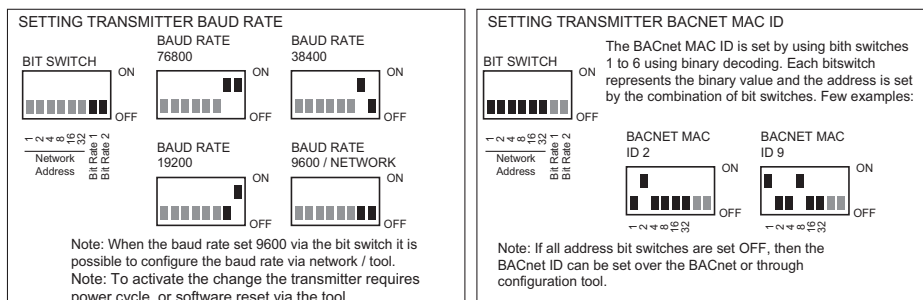
Digital Inputs can be used for pulse counting up to 25Hz, minimum pulse length 20mS. The pulse count is stored in a dedicated register and can be read over the network. It is possible to write to this register to reset the value.

NOTE: The pulse count value is not battery backed, and therefore the network master is required to manage the data synchronisation in case of power failure.

Setting Up BACnet Address and Baud Rate

The BACnet address and the baud rate is normally set through the bit switch. It is also possible to set the address and baud rate over the configuration tool or over the BACnet communication network.

NOTE: The new settings are activated automatically after approx 5 seconds if the bit switch positions have not been moved. In this case the controller reset is applied to activate the new settings.



BACnet Interoperability Building Blocks Supported (Annex K)

Application Service	Initiate	Execute	BIBB
ReadProperty		Yes	DS-RP-B
ReadPropertyMultiple		Yes	DS-RPM-B
WriteProperty		Yes	DS-WP-B
ReinitializeDevice		Yes	
Who-Is		Yes	DM-DDB-B
I-Am	Yes		
Who-Has		Yes	DM-DOB-B
I-Have	Yes		
DeviceCommunicationControl		Yes	DM-DCC-B

BACnet Standard Object Types Supported

No dynamic Creation or Deletion supported. Objects, and object instances, are assigned to fixed functions within the proprietary control application of the product as follows:

Object	Number Of Instances	Instance Assignments
Device Object	1	
Binary Input	2	BI(0) – DI1 input BI(1) – DI2 Input
Binary Output	2	BO(0) – DO1 Output BO(1) – DO2 Output

Device Object Properties (Required Object Properties)

Property Name /ID	Attributes	Range	Default
Object Identifier	R/W		MAC_Address + 651000
Object Name	R/W	32 Characters Max	Concatenation of product type and MAC address i.e. "BIO_001"
Object Type	R		8
System Status	R		STATUS_OPERATIONAL
Vendor Name	R		SyxthSense
Vendor Identifier			651
Model Name	R		URD
Protocol Version	R		1
Protocol Revision	R		10
Max APDU Length	R		480
Segmentation Support	R		No
APDU Timeout	R		3000 ms
Number APDU Retries	R		3
MaxMaster	R		127
Max_Info_Frames	R		1
Database Revision	R		0

Binary Input Objects

	Property Name /ID	Attributes	Range	Default
Required Object Properties	Object Identifier	R		
	Object Name	R		BI(0) = "DI1" BI(1) = "DI2"
	Object Type	R		3
	Present Value	R/W	0..1	
	Status Flags	R		
	Event State	R		
	Out-Of-Service	R/W		FALSE
	Polarity	R/W		POLARITY_NORMAL
	Active Text	R		"on"
Inactive Text	R		"off"	
Optional Properties	None			
Proprietary Properties	None			

Binary Output Objects

	Property Name /ID	Attributes	Range	Default
Required Object Properties	Object Identifier	R		
	Object Name	R		BO(0) = "DO1" BO(1) = "DO2"
	Object Type	R		4
	Present Value	R/W	0..1	
	Status Flags	R		
	Event State	R		
	Out-Of-Service	R/W		FALSE
	Polarity	R/W		POLARITY_NORMAL
	Priority Array	R		
	Relinquish Default	R/W		BINARY_INACTIVE
	Active Text	R		"on"
Inactive Text	R		"off"	
Optional Properties	None			
Proprietary Properties	None			

Proprietary Object Types

No dynamic Creation or Deletion supported

Object	Number Of Instances	Instance Assignments
Application Configuration Object	1	Provides a container for all the proprietary application specific properties.

App_Config Object

	Property Name /ID	Attributes	Range	Default
Required Object Properties	Object Identifier	R		MAC_Address + 651000
	Object Name	R		"App_Config"
	Object Type	R		128
Optional Properties	None			

	Property ID	Description	BACnet Data Type	Range
Proprietary Properties	30100	Firmware Version	Unsigned	Read Only
	40050	MAC Address	Unsigned	0..255
	40051	Baud Rate	Unsigned	0 = 9600 (Default) 1 = 19200 2 = 38400 3 = 57600
	40067	Hold On Delay Setting for Digital Input 1	Unsigned	1..7200 Seconds
	40068	Hold On Delay Setting for Digital Input 2	Unsigned	1..7200 Seconds
	40100	Force Reset	Unsigned	0 = Normal 1 = Force Reset
	40101	Non Volatile Memory Update	Unsigned	0 = Normal 1 = Update
	40103	Force Factory Defaults	Unsigned	0 = Normal 1 = Force Defaults
	40104	Force 0..10V Output Calibration Routine	Unsigned	0 = Normal 1 = Force Calibration

Dimensions

