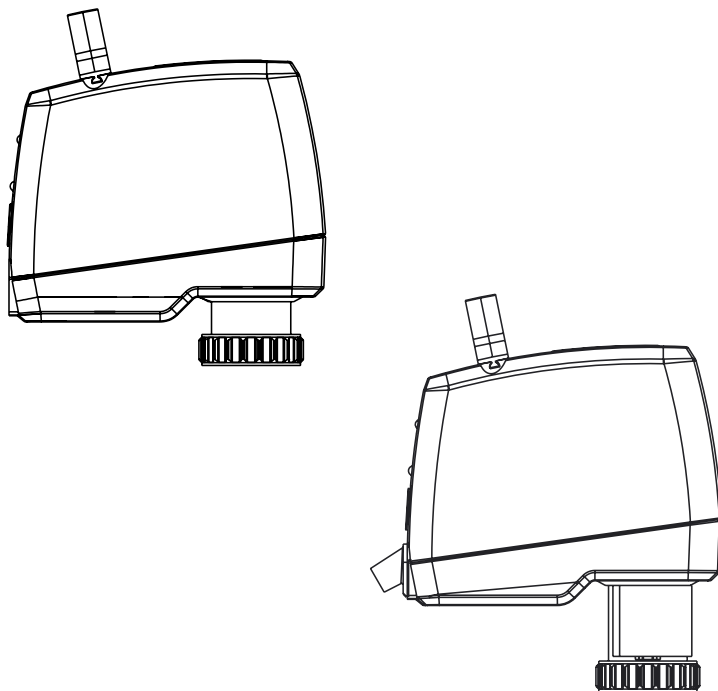


TA-Slider 160/500 BACnet MS/TP Protocol Implementation



General information

Date: 30/11/2018
Vendor Name: IMI Hydronic Engineering
Vendor ID: 926
Product Name: TA-Slider 160 BACnet MS/TP,
TA-Slider 160 BACnet MS/TP CO,
TA-Slider 500 BACnet MS/TP,
TA-Slider 500 BACnet MS/TP R24
Product Model Number: 322224 13011, 322224 1351X,
322225 13011, 322225 1331X
Application Software Version: 1.0
Firmware Revision: 2.1.1
BACnet Protocol Revision: 14
Product Description: Digitally configurable proportional push actuator – 160/200 N,
Digitally configurable proportional push-pull actuator – 500 N
BACnet Standard Device Profile: BACnet Application Specific Controller (B-ASC)
BACnet Interoperability Building Blocks (BIBBs) supported:

- Data Sharing - ReadProperty-B (DS-RP-B)
- Data Sharing - WriteProperty-B (DS-WP-B)
- Device Management - DynamicDeviceBinding-B (DM-DDB-B)
- Device Management - DynamicObjectBinding-B (DM-DOB-B)
- Device Management - DeviceCommunicationControl-B (DM-DCC-B) *
- Device Management - TimeSynchronization (DM-TS-B) **

Segmentation Capability: No
Data Link Layer Options: MS/TP master
Baud rates: Auto, 9600, 19200, 38400, 56700, 76800, 115200
Device Address Binding: No static device binding supported
Networking Options: None
Character Sets Supported: ISO 10646 (UTF-8)

*) No password required

**) Valid range for years is 2000 – 2099

BACnet object description

Device objects

Object type/ address	Name	Description	Access	Values
Device	Object ID	Value computed from the SN by default	RW	0 ... 4194303
Device	Object name	"TA-Slider 160-XXXXXXXX" or "TA-Slider 500 XXXXXXXX" by default	RW	1 to 25 char
Device	Serial-number	8 characters	R	XXXXXXXX
Device	Max-master	Maximum value for the "poll for master"	RW	1 ... 127
Device	Location	Empty by default	RW	25 char max
Device	Object description	Valve name ("Unknown" by default)	R	25 char max

Standard objects

Object type/ address	Name	Description	Access	Values	Units	Resolution
AI:0	Actual value	Actual valve position	R	0 ... 100.00	%	0.01
AI:1	Detected stroke SI	Stroke detected by the calibration process (SI)	R	250 ... 8500 (TA-Slider 160) 1000 ... 20000 (TA-Slider 500)	µm	1
AI:2	Detected stroke US	Stroke detected by the calibration process (US)	R	0.0098 ... 0.3347 (TA-Slider 160); 0.0394 ... 0.7874 (TA-Slider 500)	in	0.0001
AI:3	Motor ontime	Motor operation time	R	0 ... Max uint32	s	1
AI:4	Actuator ontime	Actuator operation time	R	0 ... Max uint32	s	1
AI:5	Actuator distance SI	Actuator distance runs (SI)	R	0 ... Max uint32	mm	1
AI:6	Actuator distance US	Actuator distance runs (US)	R	0 ... Max uint32 in inch	in	0.1
AI:7	Flow SI	Flow (l/h)	R	0 ... 4e9	l/h	1
AI:8	Flow US	Flow (US)	R	0 ... 4e9	USGPM	0.0001
AI:9	Temperature 1 SI	Temperature given by sensor 1 (SI)	R	-20 ... 120	°C	0.1
AI:10	Temperature 1 US	Temperature given by sensor 1 (US)	R	-4 ... 248	°F	0.1
AI:11	Temperature 2 SI ¹⁾	Temperature given by sensor 2 (SI)	R	-20 ... 120	°C	0.1
AI:12	Temperature 2 US ¹⁾	Temperature given by sensor 2 (US)	R	-4 ... 248	°F	0.1
AV:0	Control value	Setpoint	R(W)	0 ... 100.00	%	0.01
AV:1	Communication address	MAC Address, Range: 0 → 127, Default: 127	RW	0 ... 127	-	1
AV:2	Cyclic control timeout	Raise an error if no control signal sent before timeout	RW	0 ... 60 (default: 0; meaning "no timeout")	-	1
AV:10	Errors code	Errors code (0 means "No error")	R	0 ... 127	-	1
AV:11	Error 1	Oldest error log ³⁾	R	-7 ... 8	-	1
AV:12	Error 2	Error log ³⁾	R	-7 ... 8	-	1
AV:13	Error 3	Error log ³⁾	R	-7 ... 8	-	1
AV:14	Error 4	Error log ³⁾	R	-7 ... 8	-	1
AV:15	Error 5	Error log ³⁾	R	-7 ... 8	-	1
AV:16	Error 6	Error log ³⁾	R	-7 ... 8	-	1
AV:17	Error 7	Error log ³⁾	R	-7 ... 8	-	1
AV:18	Error 8	Error log ³⁾	R	-7 ... 8	-	1
AV:19	Error 9	Error log ³⁾	R	-7 ... 8	-	1
AV:20	Error 10	Newest error log ³⁾	R	-7 ... 8	-	1

1) Only with relay option (CO or R24 versions).

3) Timestamp of the error and short error description.

Standard objects – continuation

Object type/ address	Name	Description	Access	Values	Units	Resolution
BI:0	Forced position	Indicate if mechanical or electrical override	R	Yes / No		
BI:1	Binary Input	Binary input state	R	On / Off		
BV:0	Valve opening type	Valve direction of the input signal	R	Push to close/ Push to Open		
BV:1	Force calibration ⁴⁾	Run the calibration again	RW	On / Off		
BV:2	Bus Binary input	Bus Binary input state (effective depending on BusBinaryAction)	RW	On / Off		
BV:3	Relay ¹⁾	Relay, based on configuration	[R(W)]	Activated / Deactivated		
MSI:0	Motor status	Current motor activity	R	1, 2, 3, 4, 5, 6, 7 (Stop, Retract, Extend, Calib, ManualOverride, Clogging, Error)		
MSI:1	Power type	Power source	R	Low, (Reserved), USB		
MSI:2	Characteristic	Actuator characteristic curve	R	Linear, Equal Percentage Modified, Inverted EQM		
MSI:3	Speed ²⁾	Actuator speed	R	4 s/mm; 100 s/inch, 6 s/mm; 150 s/inch		
MSV:0	RS-485 Baud rate	Baud rate for the BACnet MS/TP communication	RW	Auto, 9600, 19200, 38400, 56700, 76800, 115200		

1) Only with relay option (CO or R24 versions).

2) Only for TA-Slider 500.

4) Force calibration object value is only raised to "On" while a forced calibration is taking place. Object goes back to value "Off" upon completion of the forced calibration.

Object processing

Object type	Optional properties	Writable properties
Analog Input	Min Pres Value Max Pres Value Resolution	Present Value Out of Service
Analog Value	Description Min Pres Value Max Pres Value Resolution	Present Value Out of Service
Binary Input	Inactive Text Active Text	Present Value Out of Service
Binary Value	Inactive Text Active Text	Present Value Out of Service
Device	Location Description Local Time Local Date Serial Number	Object Identifier Object Name Location Max APDU Length Accepted APDU Timeout Number of APDU Retries Max Master Max Info Frames
Multi-state Input	State Text	Present Value Out of Service
Multi-state Value	State Text	Present Value Out of Service

Actuator configuration

The actuator can be configured by the HyTune app (iOS version 8 or later on iPhone 4S or later, Android version 4.3 or later) + the TA-Dongle device, with or without the actuator power supplied. HyTune can be downloaded from Apple App Store or Google Play.

Once connected to a TA-Slider, HyTune allows to set, from one screen, all following bus parameters:

- baud rate,
- communication address,
- activation of terminal resistance,
- cyclic control timeout,
- automatic object ID,
- automatic device name and
- the choice to control TA-Slider via the bus or via the 0-10 VDC analogue line (hybrid mode).

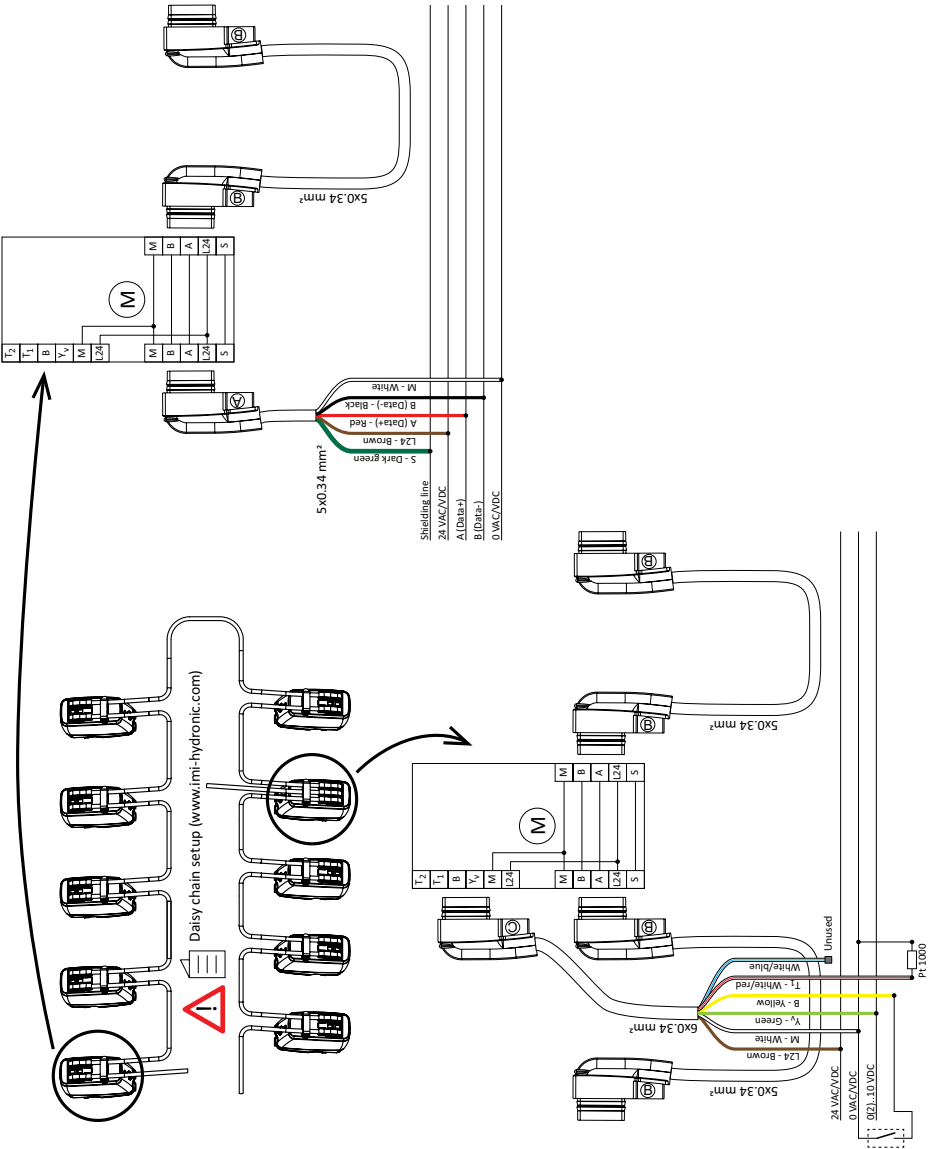
In addition, over 100 other functional parameters can be set as for any other TA-Slider.

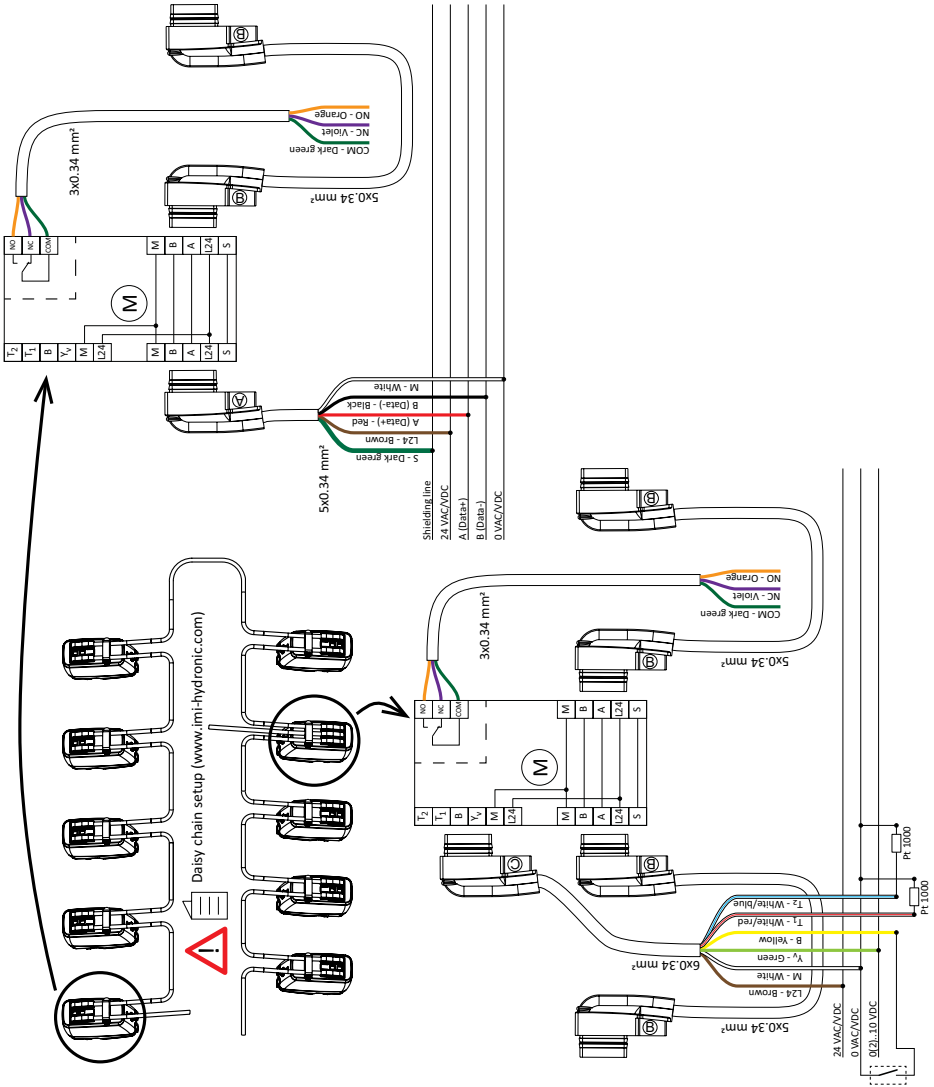
RS-485 termination resistance

As indicated above, the terminal resistance can be activated by using the HyTune app with the TA-Dongle device connected to TA-Slider.

Wiring diagrams

TA-Slider 160/500 BACnet/Modbus





We reserve the right to introduce technical alterations without prior notice.