

Climate  
Control

IMI TA

## TA-Slider 750



### Actuators

Digitally configurable proportional push-pull actuator  
– 750 N

# TA-Slider 750

Digitally configurable actuators for all control systems with or without Bus communication. Wide range of setup possibilities gives high flexibility to adapt parameters on-site. Fully programmable binary input, relay and adjustable max. stroke of the valve bring new opportunities for advanced hydronic control and balancing.



## Key features

### Convenient, reliable setup

Fully customisable by smartphone via Bluetooth using a TA-Dongle.

### Fully configurable

More than 200 setup options allow input and output signals, binary input, relay, characteristics and many other parameters to be configured.

### Easy diagnostics

Tracks the last 10 errors to allow system faults to be found quickly.

### Perfection in connectivity

Communication with the most used Bus protocols.

## Technical description

### Functions:

Proportional control  
 3-point control  
 On-off control  
 Manual override  
 Stroke detection  
 Mode, status and position indication  
 Output signal VDC  
 Stroke limitation setting  
 Minimum stroke setting  
 Valve blockage protection  
 Valve clogging detection  
 Error safe position  
 Diagnostic/Logging  
 Delayed start-up

### Plus version:

With optional Bus communication board  
 + ModBus or BACnet  
 With optional relay board  
 + 1 binary input, max. 100 Ω, cable max. 10 m or shielded.  
 + 2 relays, max. 5A, 30 VDC/250 VAC on resistive load  
 + Output signal in mA

### Supply voltage:

24 VAC/VDC ±15%.  
 100-240 VAC ±10%.  
 Frequency 50/60 Hz ±3 Hz.

### Power consumption:

24 VAC/VDC:  
 Operation: < 8 VA (VAC); < 4.5 W (VDC)  
 Standby: < 1 VA (VAC); < 0.5 W (VDC)  
 100-240 VAC:  
 Operation: < 9.7 VA (VAC)  
 Standby: < 1.8 VA (VAC)

### Input signal:

0(2)-10 VDC,  $R_i$  47 kΩ.  
 Adjustable sensitivity 0.1-0.5 VDC.  
 0.33 Hz low pass filter.  
 0(4)-20 mA  $R_i$  500 Ω.  
 Proportional:  
 0-10, 10-0, 2-10 or 10-2 VDC  
 0-20, 20-0, 4-20 or 20-4 mA  
 Proportional split-range:  
 0-5, 5-0, 5-10 or 10-5 VDC  
 0-4.5, 4.5-0, 5.5-10 or 10-5.5 VDC  
 2-6, 6-2, 6-10 or 10-6 VDC  
 0-10, 10-0, 10-20 or 20-10 mA  
 4-12, 12-4, 12-20 or 20-12 mA  
 Proportional dual-range (for change-over):  
 0-3.3 / 6.7-10 VDC,  
 10-6.7 / 3.3-0 VDC,  
 2-4.7 / 7.3-10 VDC or  
 10-7.3 / 4.7-2 VDC.  
 Default setting: Proportional 0-10 VDC.

### Output signal:

0(2)-10 VDC, max. 8 mA, min. 1.25 kΩ.  
 Plus version:  
 0(4)-20 mA, max. 700 Ω.  
 Ranges: See "Input signal".  
 Default setting: Proportional 0-10 VDC.

### Characteristics:

Linear, EQM 0.25 and inverted EQM 0.25.  
 Default setting: Linear.

### Control speed:

3, 4, 6, 8, 12 or 16 s/mm  
 Default setting: 3 s/mm.

### Adjusting force:

750 N

### Temperature:

Media temperature: 0°C – +120°C  
 Operating environment: 0°C – +50°C (5-95%RH, non-condensing)  
 Storage environment: -20°C – +70°C (5-95%RH, non-condensing)

### Ingress protection:

IP 54 (all directions)  
 (according to EN 60529)

**Protection class:**

(according to EN 61140).

100-240 VAC: Class I.

24 VAC/VDC: Plus version with optional relay board, Class I. All other versions, Class III safety extra low voltage.

**Stroke:**

22 mm. Automatic detection of the valve lift (stroke detection).

**Noise level:**

Max. 40 dBA

**Weight:**

1,6 kg

**Connection to valve:**

By two M8 screws to the valve and by quick connection to the stem.

**Material:**

Cover: PBT

Bracket: Alu EN44200

**Colour:**

Orange RAL 2011, grey RAL 7043.

**Marking:**

IMI TA, product name, article No. and technical specification.

LED indication description.

**Certification CE:**

LV-D. 2014/35/EU: EN 60730-1, -2-14.

EMC-D. 2014/30/EU: EN 60730-1, -2-14.

RoHS-D. 2011/65/EU: EN 63000.

**Product standard:**

EN 60730

(for Residential and industrial areas)

**Cable:**

Wire cross-section\*: 0.5-2.0 mm<sup>2</sup>

Protection class I: H05VV-F or similar

Protection class III: LiYY or similar

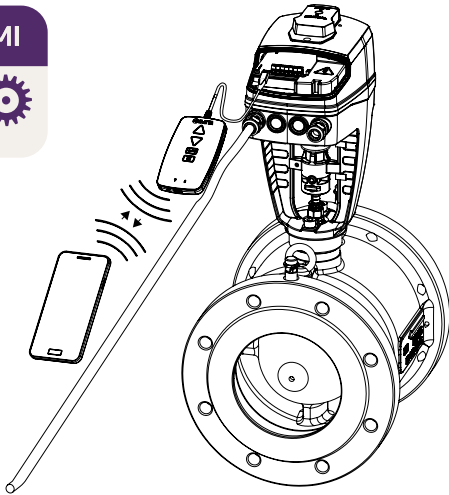
\*) **Note:** Wire cross-sections must be chosen according to actuator power consumption and line length, such as the voltage supply to the actuator does not go below 20.4 VAC/VDC (24 VAC/VDC minus 15%).

In case of VDC input signal on a 24 VAC/VDC powered actuator, the voltage drop on neutral line must be smaller than the defined hysteresis level for the VDC input signal.

## Function

### Setting

The actuator can be set 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. The setting configuration can be stored in the TA-Dongle for setting of one or several actuators. Connect the TA-Dongle to the actuator and press the configuration button. HyTune can be downloaded from the App Store or Google Play.



### Setting Bus communication parameters

Configuration of Bus parameters such as address, baud rate, parity and more is to be carried out by the HyTune app + the TA-Dongle device, with or without the actuator power supplied. More detailed information, please see TA-Slider 750/1250 Bus protocol implementation documents.

### Manual override

By 5 mm Allen key or by the TA-Dongle device.

**Note:** Power supply needed when TA-Dongle is used.

### Position indicator

Visible mechanical stroke indication on the bracket.

### Calibration/Stroke detection

According to selected settings in the table.

Type of calibration	At power on	After manual override
Both end positions (full)	√ *	√
Fully extended position (fast)	√	√ *
None	√	

\*) Default

**Note:** A calibration refresh can be automatically repeated monthly or weekly.

Default setting: Off.

### Stroke limitation setting

A maximum stroke smaller than or equal to the detected valve lift can be set to the actuator.

For some IMI TA/IMI Heimeier valves it can also be set to a

$Kv_{max}/q_{max}$

Default setting: No stroke limitation (100%).

### Minimum stroke setting

The actuator can be set with a minimum stroke below which it will not go (except for calibration).

For some IMI TA/IMI Heimeier valves, it can also be set to a  $q_{min}$ .  
Default setting: No minimum stroke (0%).

### Valve blockage protection

The actuator will perform a quarter of a full stroke and then back to desired value if no actuation takes place for one week or one month.

Default setting: Off.

### Valve clogging detection

If actuation stops before the desired value is reached, the actuator moves back ready to make a new attempt. The actuator will move to the configured error safe position after three attempts.

Default setting: On.

### Error safe position

Fully extended or retracted position when following errors occur; low power, line break, valve clogging or stroke detection failure.

Default setting: Fully extended position.

### Diagnostics/logging

The last 10 errors (low power, line break, valve clogging, stroke detection failure) with time stamps can be read using the HyTune app + TA-Dongle device. Logged errors will be cleared if the power is disconnected.

### Delayed start-up

The actuator can be specified a delay (0 to 1275 sec.) before starting up after a power supply cut. This is useful when used with a control system that has itself a long start-up time.

Default setting: 0 seconds.

### Plus version:

#### Connection interfaces for Bus communication

- RS485; BACnet MS/TP, Modbus/RTU
- Ethernet; BACnet/IP, Modbus/TCP

#### Binary input

If the binary input circuit is open, the actuator will go to a set stroke, switch to a second stroke limitation setting or drive to its full stroke regardless of any limitations for flushing purpose. See also Change-over system detection.

Default setting: Off

#### Change-over system detection

Switching between two different stroke limitation settings by toggling the binary input or using the dual-range input signal.

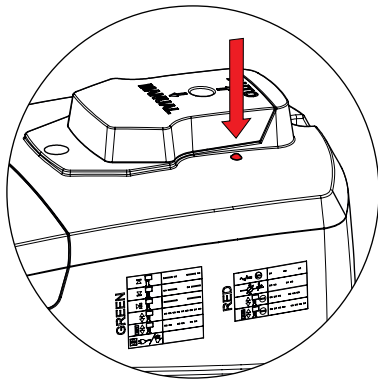
For the Bus versions, this switching may also be made via the Bus.

## LED indication

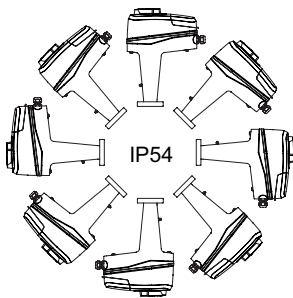
	Status	Green
	— — — —	Long pulse - Short pulse
	- - - - -	Short pulse - Long pulse
	— — — —	Long pulses
	- - - - -	Short pulses
	- - - - -	2 short pulses
		Off

	Error code	Red
	- - -	1 pulse
	- - - -	2 pulses
	- - - - -	3 pulses
	- - - - -	4 pulses

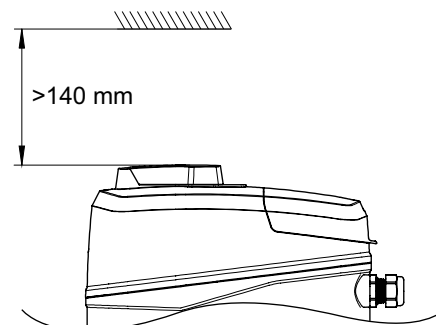
If an error is detected, red pulses are displayed as the green status lights flash alternately. More detailed information, please see the HyTune app + TA-Dongle.



## Installation



### Note!



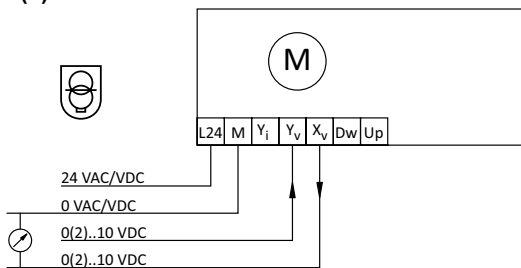
## Connection diagram – Terminal/Description

Terminal	Description
L24	Power supply 24 VAC/VDC
M*	Neutral for power supply 24 VAC/VDC and signals
L	Power supply 100-240 VAC
N	Neutral for power supply 100-240 VAC
Y <sub>i</sub>	Input signal for proportional control 0(4)-20 mA, 500 Ω
Y <sub>v</sub>	Input signal for proportional control 0(2)-10 VDC, 47 kΩ
X <sub>i</sub>	Output signal 0(4)-20 mA, max. resistance 700 Ω
X <sub>v</sub>	Output signal 0(2)-10 VDC, max. 8 mA or min. load resistance 1.25 kΩ
Dw	3-point control signal for extending actuator spindle (24 VAC/VDC or 100-240 VAC)
Up	3-point control signal for retracting actuator spindle (24 VAC/VDC or 100-240 VAC)
B	Connection for potential free contact (e.g. open window detection), max. 100 Ω, max. 10 m cable or shielded
COM1, COM2	Common relay contacts, max. 250 VAC, max. 5A @ 250 VAC on resistive load, max. 5A @ 30 VDC on resistive load
NC1, NC2	Normally closed contacts for relays 1 and 2
NO1, NO2	Normally open contacts for relays 1 and 2

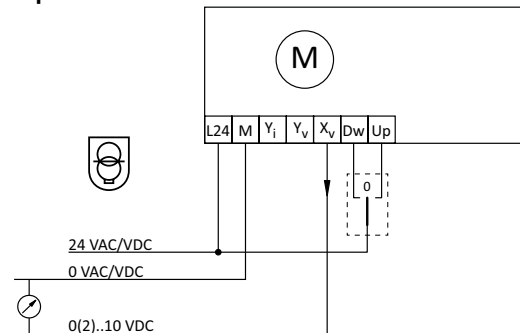
\*) All M terminals are internally connected.

## Connection diagram – 24 V

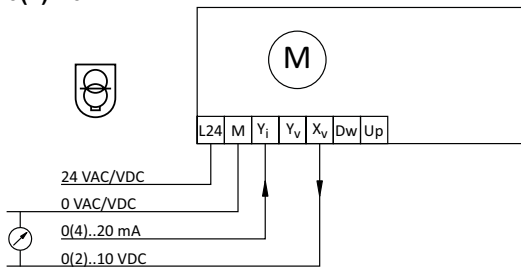
### 0(2)-10 VDC



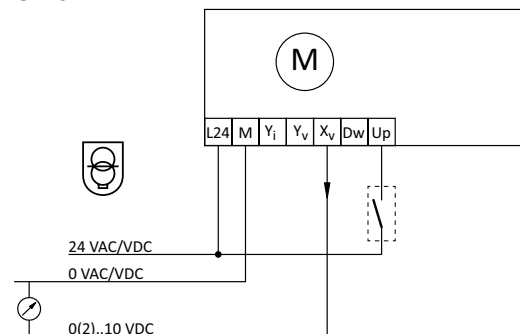
### 3-point



### 0(4)-20 mA



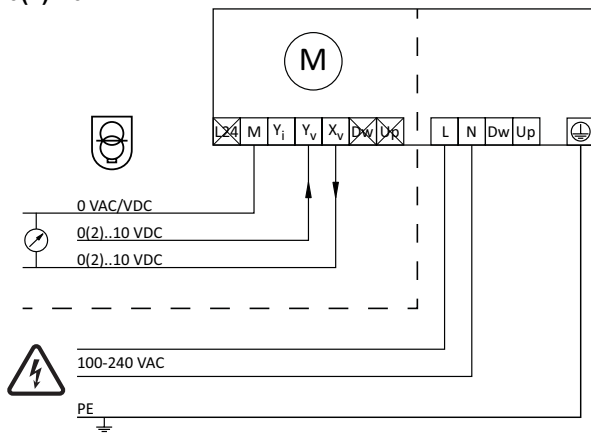
### On-off



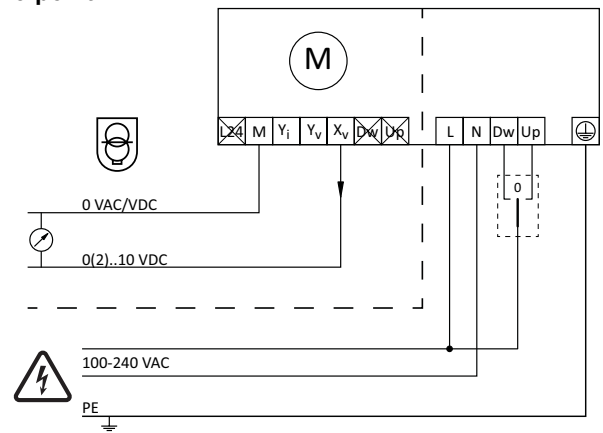
24 VAC/DC operating only with safety transformer according EN 61558-2-6

## Connection diagram – 100-240 V

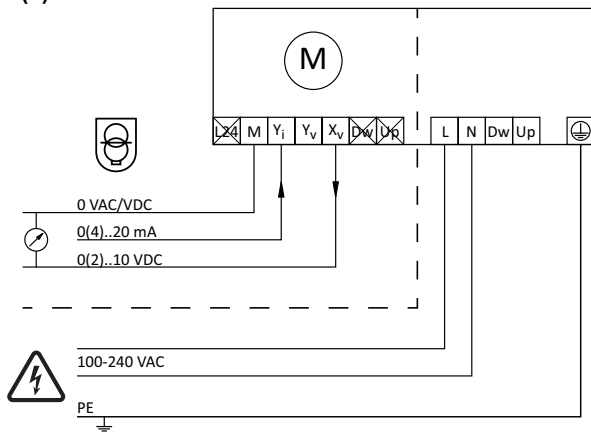
**0(2)-10 VDC**



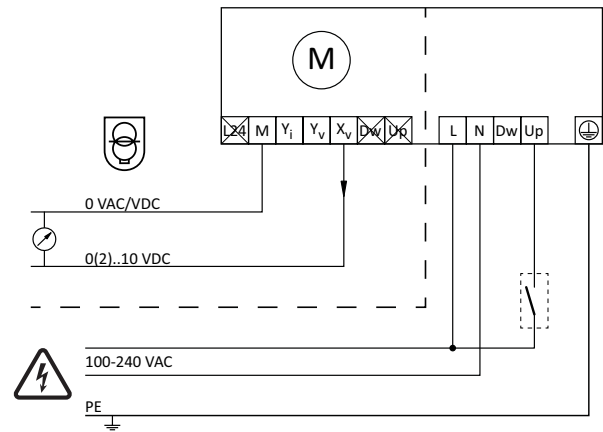
**3-point**



**0(4)-20 mA**



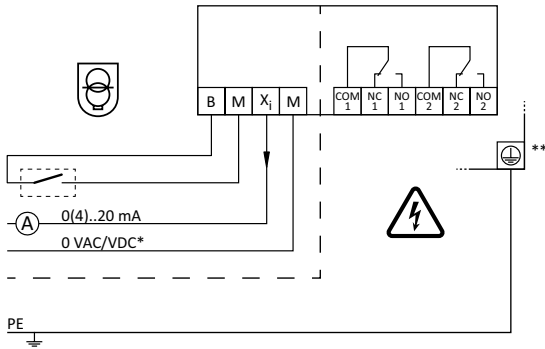
**On-off**



24 VAC/DC operating only with safety transformer according EN 61558-2-6

## Connection diagram – Relay (for Plus version only)

### Optional relay board



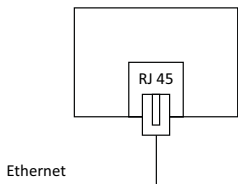
\*) Low voltage neutral

\*\*\*) Ground connection required.

## Connection diagram – Bus communication (for Plus version only)

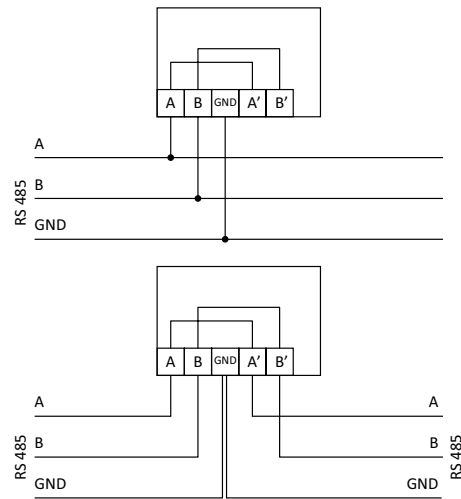
### Optional Ethernet communication board

BACnet/IP, Modbus/TCP



### Optional RS 485 board

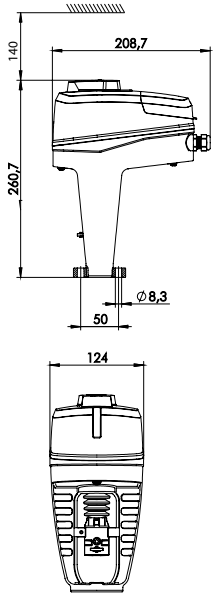
BACnet MS/TP, Modbus/RTU



**Note:** A, B, A', B' and GND terminals are isolated from all other terminals.



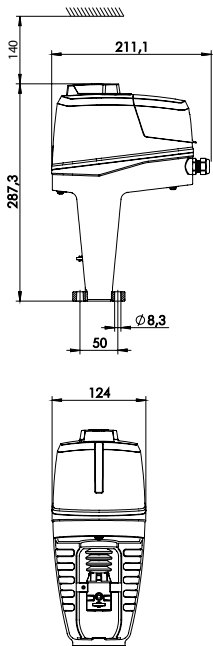
## Articles



### TA-Slider 750

Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point, on-off

Supply voltage	EAN	Article No
24 VAC/VDC	5901688828458	322226-10110
100-240 VAC	5902276883620	322226-40110



### TA-Slider 750 Plus

Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point, on-off

With binary input, relays, mA output

Supply voltage	Bus	EAN	Article No
24 VAC/VDC	-	5902276883965	322226-10219
100-240 VAC	-	5902276883972	322226-40219

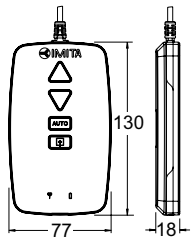
With BUS communication (without binary input, relays, mA output)

Supply voltage	Bus	EAN	Article No	
24 VAC/VDC	Modbus/RTU	RS 485	5901688828489	322226-12210
	BACnet MS/TP	RS 485	5901688828496	322226-13210
	Modbus/TCP	Ethernet	5901688828502	322226-14210
	BACnet/IP	Ethernet	5901688828526	322226-16210
100-240 VAC	Modbus/RTU	RS 485	5902276883651	322226-42210
	BACnet MS/TP	RS 485	5902276883668	322226-43210
	Modbus/TCP	Ethernet	5902276883675	322226-44210
	BACnet/IP	Ethernet	5902276883699	322226-46210

With BUS communication, binary input, relays, mA output

Supply voltage	Bus	EAN	Article No	
24 VAC/VDC	Modbus/RTU	RS 485	5902276883576	322226-12219
	BACnet MS/TP	RS 485	5902276883583	322226-13219
	Modbus/TCP	Ethernet	5902276883590	322226-14219
	BACnet/IP	Ethernet	5902276883613	322226-16219
100-240 VAC	Modbus/RTU	RS 485	5902276883712	322226-42219
	BACnet MS/TP	RS 485	5902276883729	322226-43219
	Modbus/TCP	Ethernet	5902276883736	322226-44219
	BACnet/IP	Ethernet	5902276883750	322226-46219

## Additional equipment



### TA-Dongle

For Bluetooth communication with the HyTune app, transfer configuration settings and manual override.

	EAN	Article No
	5901688828632	322228-00001

## Accessories

### Stem heater

Including spindle top (extension) and extended screws.

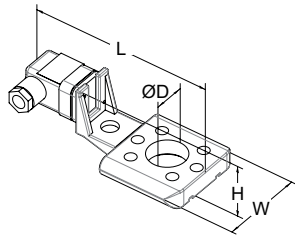
Temperature range till  $-10^{\circ}\text{C}$ .

Voltage 24 VAC  $\pm 10\%$ , 50/60 Hz  $\pm 5\%$ .

Power  $P_N$  approx. 30 W.

Current 1,4 A.

Surface temperature max.  $50^{\circ}\text{C}$ .



For valve	DN	L	H	W	D	EAN	Article No
		146	49	70	30		
TA-Modulator	40-50					5902276819483	322042-80802
TA-Modulator	65-200					3831112534834	322042-80010
KTM 512	15-50					3831112533431	322042-80900
KTM 512	65-125					3831112533455	322042-81401