

# TA-Slider 750



## Actuators

Digitally configurable proportional push-pull actuator – 750 N

Engineering  
*GREAT* Solutions

# 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.
- > **Easy diagnostics**  
Tracks the last 10 errors to allow system faults to be found quickly.
- > **Fully configurable**  
More than 200 setup options allow input and output signals, binary input, relay, characteristics and many other parameters to be configured.
- > **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  
Valve blockage protection  
Valve clogging detection  
Error safe position  
Diagnostic/Logging

### Plus version:

With optional Bus communication board  
+ ModBus or BACnet  
With optional relay board  
+ 1 binary input, max. 100  $\Omega$ , 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  $\pm 15\%$ .  
100-240 VAC  $\pm 10\%$ .  
Frequency 50/60 Hz  $\pm 3$  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)

2

### Input signal:

0(2)-10 VDC,  $R_i$  47 k $\Omega$ .  
Adjustable sensitivity 0.1-0.5 VDC.  
0.33 Hz low pass filter.  
0(4)-20 mA  $R_i$  500  $\Omega$ .  
*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 k $\Omega$ .  
*Plus version:*  
0(4)-20 mA, max. 700  $\Omega$ .  
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:

20 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 50581.

**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

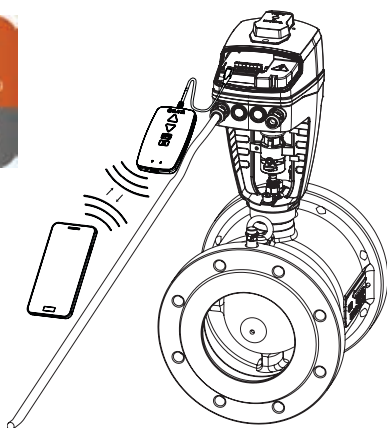
\*) **Note:** Wire cross-sections must be chosen according to actuator power consumption and line length, such as the voltage supply to the actuator does not go below 20.4 VAC/VDC (24 VAC/VDC minus 15%).

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.

**LED indication**

Status	Green	
Fully retracted (actuator stem)	Long pulse - Short pulse	(- · - ·)
Fully extended (actuator stem)	Short pulse - Long pulse	(· - · -)
Intermediate position	Long pulses	(- -)
Moving	Short pulses	(· ·)
Calibrating	2 short pulses	(·· ··)
Manual mode or no power supply	Off	

Error code	Red	
Power supply too low	1 pulse	(· ·)
Line broken (2-10 V or 4-20 mA)	2 pulses	(·· ··)
Valve clogging or foreign object	3 pulses	(··· ···)
Stroke detection failure	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.

**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**

The stroke can be set to a percentage (20-100%) of detected valve lift.

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

$Kv_{max}/q_{max}$

Default setting: No stroke limitation (100%).

**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 retracted 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.

**Plus version:**

**Connection interfaces for Bus communication**

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

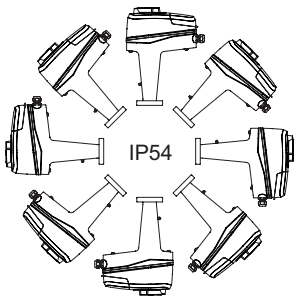
**Binary input**

If the binary input circuit is open the actuator will go to a set stroke or switch to a second stroke limitation setting, see also Change-over system detection.  
Default setting: Off

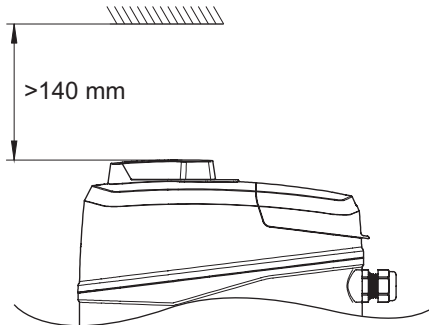
**Change-over system detection**

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.

**Installation**



**Note!**



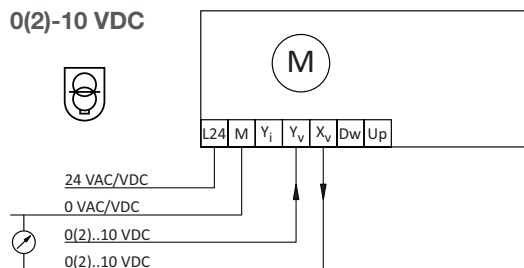
**Connection diagram – Terminal/Description**

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

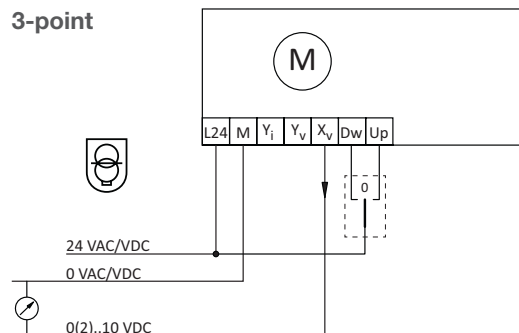
\*) All M terminals are internally connected.

## Connection diagram – 24 V

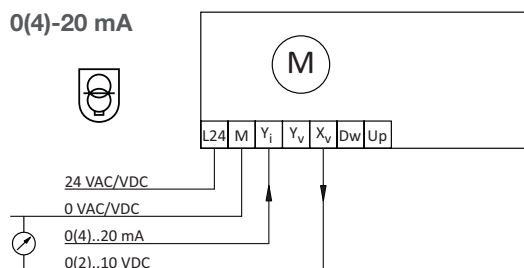
0(2)-10 VDC



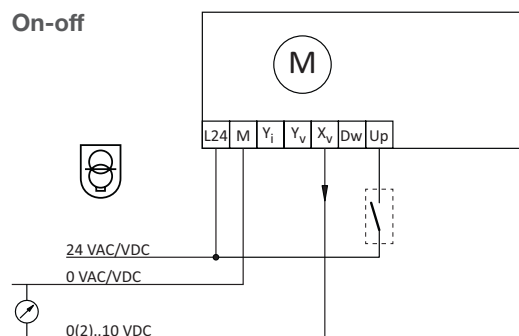
3-point



0(4)-20 mA

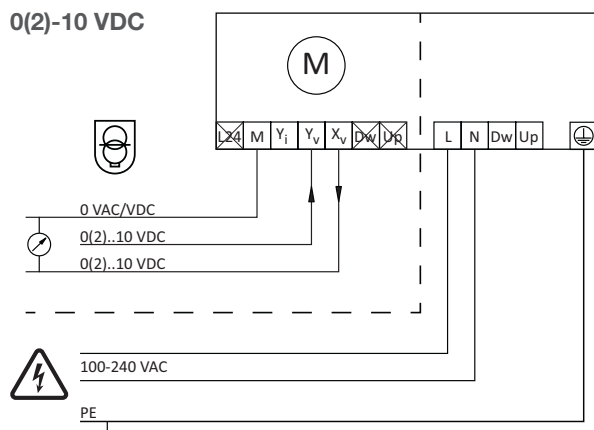


On-off

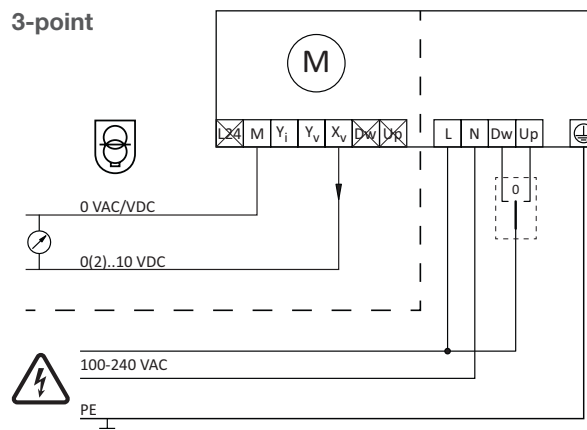


## Connection diagram – 100-240 V

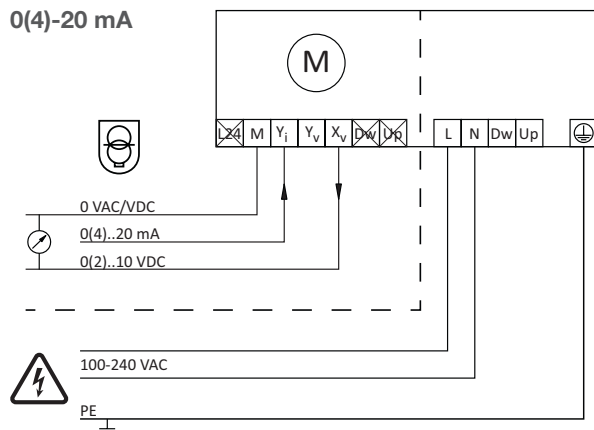
0(2)-10 VDC



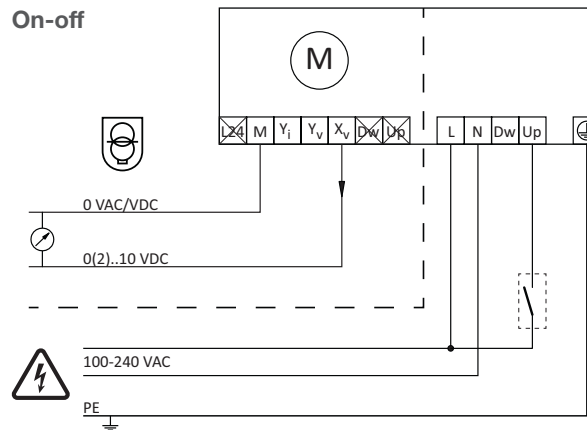
3-point



0(4)-20 mA



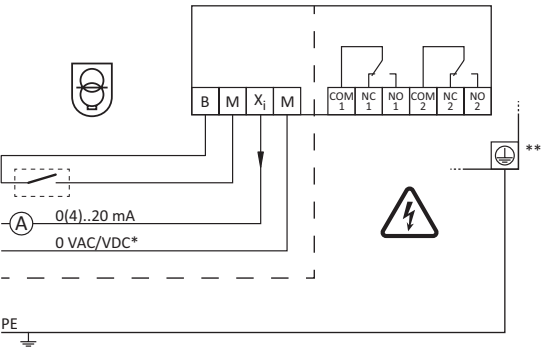
On-off



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

Connection diagram – Relay (for Plus version only)

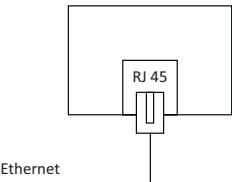
Optional relay board



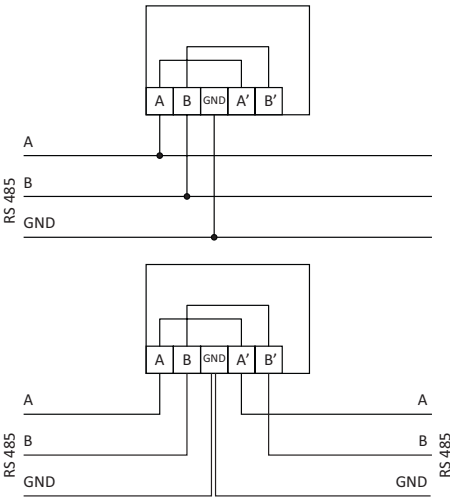
\*) Low voltage neutral  
\*\*) Ground connection required.

Connection diagram – Bus communication (for Plus version only)

Optional Ethernet communication board  
BACnet/IP, Modbus/TCP

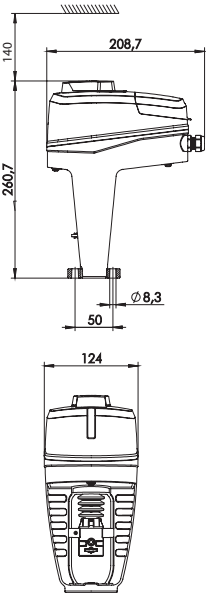


Optional RS 485 board  
BACnet MS/TP, Modbus/RTU



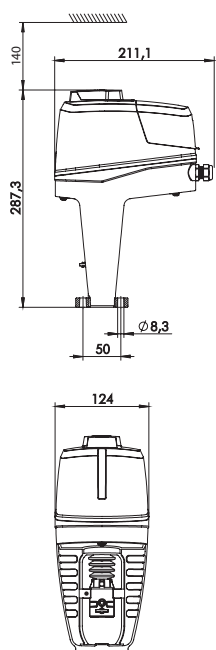
**Note:** A, B, A', B' and GND terminals are isolated from all other terminals.

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

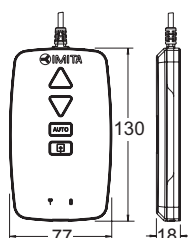
#### With BUS communication (without binary input, relays, mA output)

Supply voltage	Bus	EAN	Article No
24 VAC/VDC	Modbus/RTU	RS 485	5901688828489
	BACnet MS/TP	RS 485	5901688828496
	Modbus/TCP	Ethernet	5901688828502
	BACnet/IP	Ethernet	5901688828526
100-240 VAC	Modbus/RTU	RS 485	5902276883651
	BACnet MS/TP	RS 485	5902276883668
	Modbus/TCP	Ethernet	5902276883675
	BACnet/IP	Ethernet	5902276883699

#### With BUS communication, binary input, relays, mA output

Supply voltage	Bus	EAN	Article No
24 VAC/VDC	Modbus/RTU	RS 485	5902276883576
	BACnet MS/TP	RS 485	5902276883583
	Modbus/TCP	Ethernet	5902276883590
	BACnet/IP	Ethernet	5902276883613
100-240 VAC	Modbus/RTU	RS 485	5902276883712
	BACnet MS/TP	RS 485	5902276883729
	Modbus/TCP	Ethernet	5902276883736
	BACnet/IP	Ethernet	5902276883750

## Additional equipment

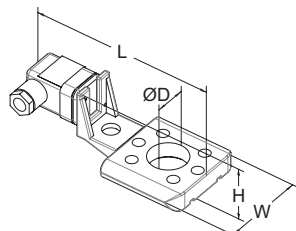


### TA-Dongle

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 24V AC  $\pm 10\%$  50/60Hz  $\pm 5\%$ .

Power  $P_N$  approx. 30 W.

Current 1,4 A.

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

For valve	L	H	W	D	EAN	Article No
	146	49	70	30		
TA-FUSION DN 32-50					3831112533509	322042-80901
TA-FUSION DN 65-150					3831112533448	322042-81400
KTM 512 DN 15-50					3831112533431	322042-80900
KTM 512 DN 65-125					3831112533455	322042-81401
KTM 50 DN 100-200					3831112533455	322042-81401