

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
Self-stroking
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, BACnet or KNX
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 $\pm 15\%$.
100-240 VAC $\pm 10\%$.
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)
2

Input signal:

0(2)-10 VDC, R_i 47 k Ω .
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, 20-10 mA
4-12, 12-4, 12-20, 20-12 mA

Output signal:

0(2)-10 VDC, max. 8 mA, min. 1.25 k Ω .

Plus version:

0(4)-20 mA, max. 700 Ω .
Ranges: See "Input signal".

Characteristics:

Linear, EQM 0.25 and inverted EQM 0.25.

Control speed:

3, 4, 6, 8, 12 or 16 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 (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 (self-stroking).

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)

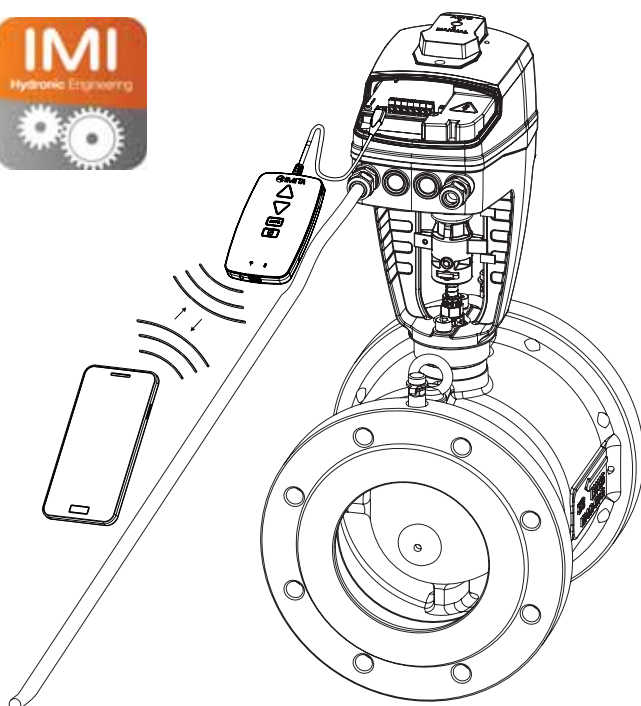
Cable:

Wire type: H05VV
Wire cross-section: 0.25-2.0 mm²
Protection class I: H05VV-F or similar
Protection class III: LiYY or similar

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.



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/self-stroking

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 $K_{v_{max}}/q_{max}$.

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 (open valve).

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

- Twisted pair; KNX/TP
- RS485; ModBus/RTU, BACnet MS/TP
- Ethernet; KNX/IP, BACnet/IP and ModBus/TCP

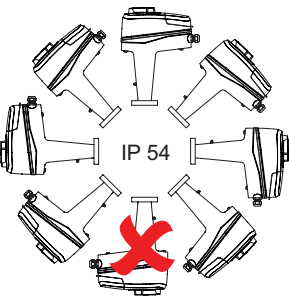
Binary input

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

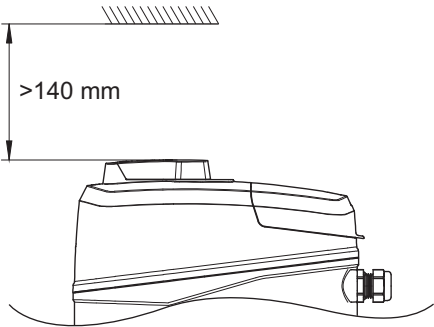
Change-over system detection

Switching between two different stroke limitation settings by toggling the binary input.

Installation



Note!



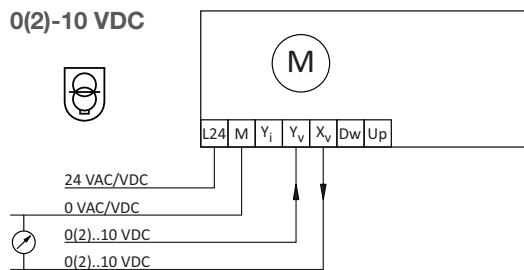
Connection diagram – Terminal/Description

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 _i	Input signal for proportional control 0(4)-20 mA, 500 Ω
Y _v	Input signal for proportional control 0(2)-10 VDC, 47 kΩ
X _i	Output signal 0(4)-20 mA, max. resistance 700 Ω
X _v	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

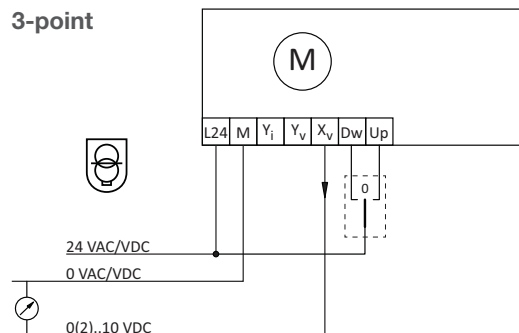
*) All M terminals are internally connected.

Connection diagram – 24 V

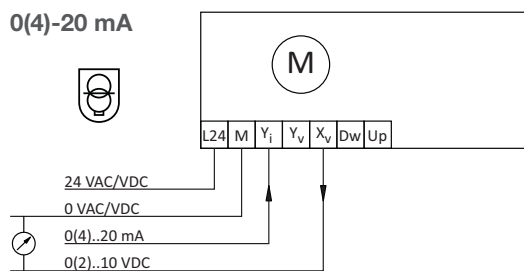
0(2)-10 VDC



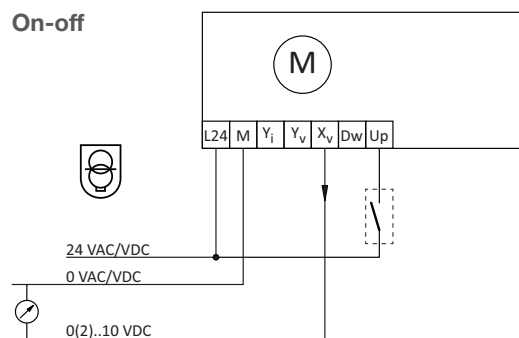
3-point



0(4)-20 mA

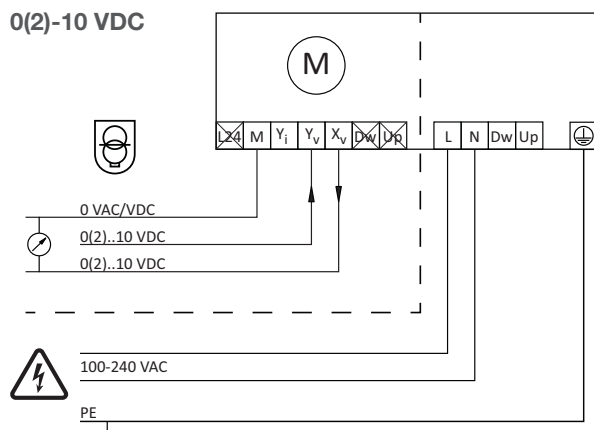


On-off

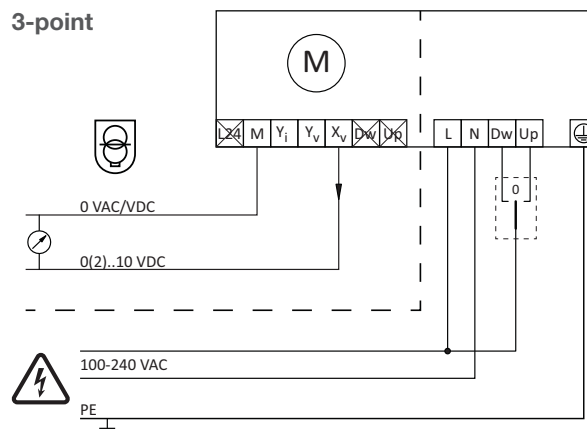


Connection diagram – 100-240 V

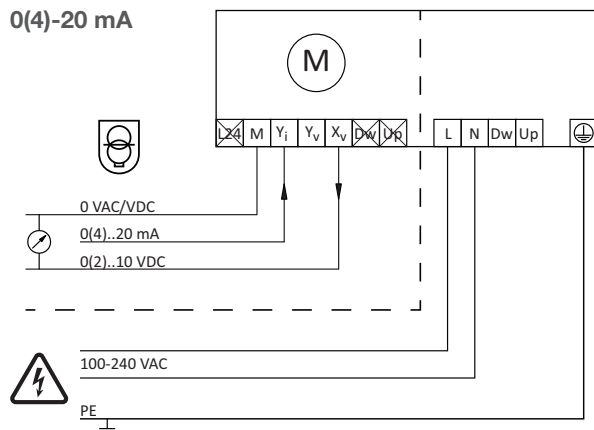
0(2)-10 VDC



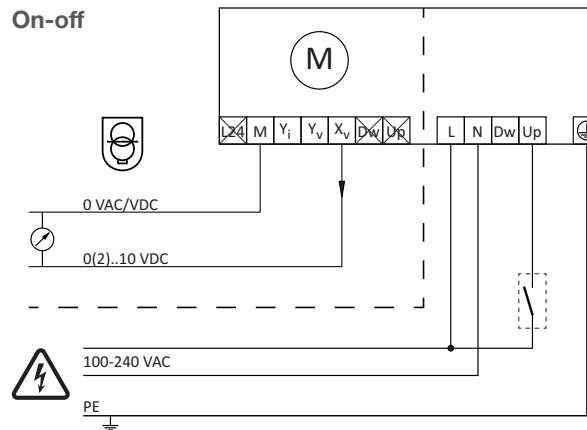
3-point



0(4)-20 mA

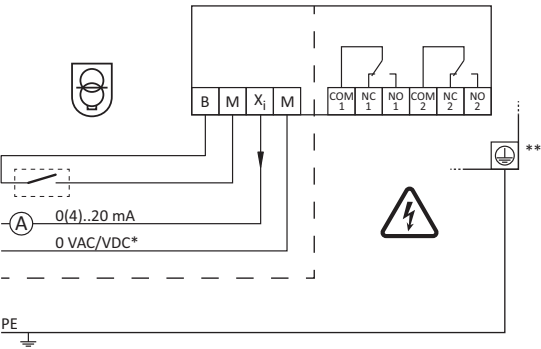


On-off



Connection diagram – Relay (for Plus version only)

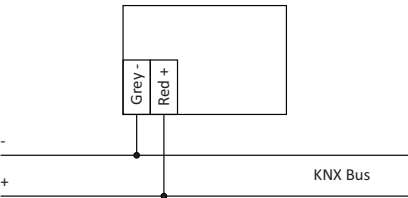
Optional relay board



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

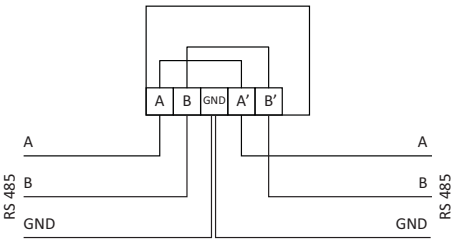
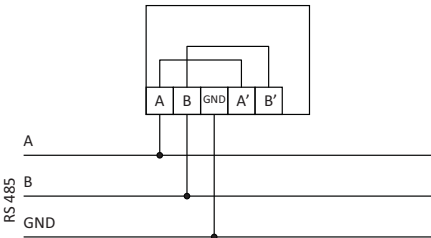
Connection diagram – BUS communication (for Plus version only)

Optional KNX TP board



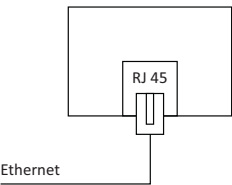
Note: KNX terminals are isolated from all other terminals.

Optional RS 485 board

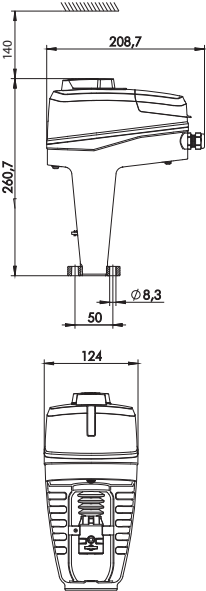


Note: A, B, A', B' and GND terminals are isolated from all other terminals.

Optional Ethernet communication board
KNX IP, BACnet/IP or Modbus/TCP

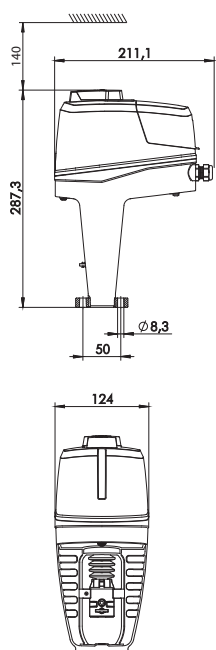


Articles



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

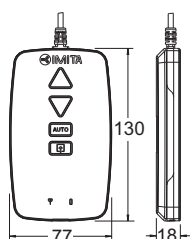
With BUS communication (without binary input, relays, mA output)

Supply voltage	BUS		EAN	Article No
24 VAC/VDC	KNX-TP	Twisted pair	5901688828472	322226-11210
	Modbus/RTU	RS 485	5901688828489	322226-12210
	BACnet MS/TP	RS 485	5901688828496	322226-13210
	Modbus/TCP	Ethernet	5901688828502	322226-14210
	KNX/IP	Ethernet	5901688828519	322226-15210
	BACnet/IP	Ethernet	5901688828526	322226-16210
100-240 VAC	KNX-TP	Twisted pair	5902276883644	322226-41210
	Modbus/RTU	RS 485	5902276883651	322226-42210
	BACnet MS/TP	RS 485	5902276883668	322226-43210
	Modbus/TCP	Ethernet	5902276883675	322226-44210
	KNX/IP	Ethernet	5902276883682	322226-45210
	BACnet/IP	Ethernet	5902276883699	322226-46210

With BUS communication, binary input, relays, mA output

Supply voltage	BUS		EAN	Article No
24 VAC/VDC	KNX-TP	Twisted pair	5902276883569	322226-11219
	Modbus/RTU	RS 485	5902276883576	322226-12219
	BACnet MS/TP	RS 485	5902276883583	322226-13219
	Modbus/TCP	Ethernet	5902276883590	322226-14219
	KNX/IP	Ethernet	5902276883606	322226-15219
	BACnet/IP	Ethernet	5902276883613	322226-16219
100-240 VAC	KNX-TP	Twisted pair	5902276883705	322226-41219
	Modbus/RTU	RS 485	5902276883712	322226-42219
	BACnet MS/TP	RS 485	5902276883729	322226-43219
	Modbus/TCP	Ethernet	5902276883736	322226-44219
	KNX/IP	Ethernet	5902276883743	322226-45219
	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

