

# TA-Slider 160



## Actuators

Digitally configurable proportional push actuator –  
160/200 N

# TA-Slider 160

Digitally configurable actuators with or without change-over, and a wide range of setup options provide extensive flexibility for on-site parameter adaptation. 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.
- > **Quick copying of settings**  
Setup configuration can be copied quickly from the TA-Dongle to identical TA-Slider actuators.

## Technical description

### Functions:

Proportional control  
Manual override (TA-Dongle)  
Stroke detection  
Self-adjusting force  
Mode, status and position indication  
Stroke limitation setting  
Minimum stroke setting  
Valve blockage protection  
Valve clogging detection  
Error safe position  
Diagnostic/Logging  
Delayed start-up

### I/O version:

+ 1 binary input, max. 100 Ω, cable max. 10 m or shielded.  
+ Output signal

### Plus version:

+ 1 binary input, max. 100 Ω, cable max. 10 m or shielded.  
+ 1 relay, max. 5A, 30 VDC/250 VAC on resistive load  
+ Output signal

### CO (change-over) version:

+ 1 binary input, max. 100 Ω, cable max. 10 m or shielded.  
+ 1 relay, internally wired for control of TA-M106 actuator on TA-6-way valve (max. 2A, 30 VAC on resistive load).  
+ Output signal

### Supply voltage:

24 VAC/VDC ±15%.  
Frequency 50/60 Hz ±3 Hz.  
CO version:  
24 VAC ±15%.  
Frequency 50/60 Hz ±3 Hz.

### Power consumption:

Operation: < 1.0 VA (VAC); < 0.6 W (VDC)  
Standby: < 0.5 VA (VAC); < 0.25 W (VDC)  
I/O, CO versions:  
Operation: < 1.3 VA (VAC); < 0.7 W (VDC)  
Standby: < 0.5 VA (VAC); < 0.25 W (VDC)  
Plus version:  
Operation: < 1.8 VA (VAC); < 1.0 W (VDC)  
Standby: < 0.5 VA (VAC); < 0.25 W (VDC)  
CO version: TA-M106 actuator consumption must be added separately.

### Input signal:

0(2)-10 VDC, R, 47 kΩ.  
Adjustable hysteresis sensitivity 0.1-0.5 VDC.  
0.33 Hz low pass filter.  
Proportional:  
0-10, 10-0, 2-10 or 10-2 VDC.  
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.  
Proportional dual-range (for change-over):  
0-3.3 / 6.7-10 VDC,  
2-4.7 / 7.3-10 VDC,  
0-4.5 / 5.5-10 VDC or  
2-5.5 / 6.5-10 VDC.  
Default setting: Proportional 0-10 VDC.

### Output signal:

I/O, Plus, CO versions:  
0(2)-10 VDC, max. 8 mA, min. 1.25 kΩ.  
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:

10 s/mm

### Adjusting force:

160/200 N  
Self-adjusting for IMI Hydronic Engineering valves.

### Temperature:

Media temperature: max. 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:

IP54 (all directions)  
(according to EN 60529)

### Protection class:

(according to EN 61140)  
III (SELV) TA-Slider 160, 160 I/O, 160 CO  
II TA-Slider 160 Plus (protective insulation)

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**Cable:**

1, 2 or 5 m. With wire end sleeves.  
Halogen free as option, fire class B2<sub>ca</sub> – s1a, d1, a1 according to EN 50575.  
TA-Slider 160: type LiYY, 3x0.25 mm<sup>2</sup>.  
TA-Slider 160 I/O: type LiYY, 5x0.25 mm<sup>2</sup>.  
TA-Slider 160 Plus: type LiYY, 5x0.25 mm<sup>2</sup> and relay cable type H03VV-F, 3x0.75 mm<sup>2</sup>, with wire end sleeves.  
TA-Slider 160 CO: type LiYY, 5x0.25 mm<sup>2</sup> and relay cable type LiYY, 3x0.34 mm<sup>2</sup>, with connector to actuator TA-M106.

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**Stroke:**

6,9 mm. Automatic detection of the valve lift (stroke detection).

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**Noise level:**

Max. 30 dBA

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**Weight:**

TA-Slider 160, I/O:  
0.20 kg, 1 m cable.  
0.25 kg, 2 m cable.  
0.38 kg, 5 m cable.  
TA-Slider 160 Plus:  
0.28 kg, 1 m cables.  
0.38 kg, 2 m cables.  
0.67 kg, 5 m cables.  
TA-Slider 160 CO:  
0.32 kg, 1 m/1.5 m cables.  
0.37 kg, 2 m/1.5 m cables.  
0.50 kg, 5 m/1.5 m cables.

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**Connection to valve:**

Swivelling nut M30x1,5.

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**Material:**

Cover: PC/ABS GF8  
Housing: PA GF40.  
Swivelling nut: Nickel-plated brass.

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**Colour:**

White RAL 9016, grey RAL 7047.

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**Marking:**

Label: IMI TA, CE, product name, article No. and technical specification.

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**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.

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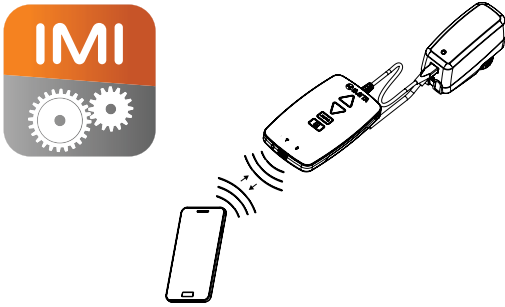
**Product standard:**

EN 60730.

## 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 using the TA-Dongle device. No power supply needed.

### 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.

### Self-adjusting force

Automatic valve type detection, the force is set to 160 or 200 N for TA/HEIMEIER valves.  
Default setting: On.

### Stroke limitation setting

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

### I/O, Plus and CO versions:

#### 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

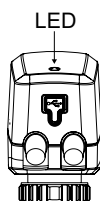
Switching between two different stroke limitation settings by toggling the binary input or using the dual-range input signal.

## LED indication

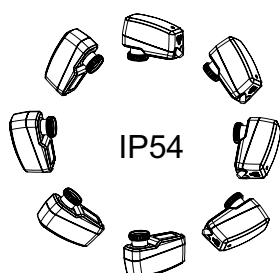
		Status	Red (heating) / Blue (cooling)
		Fully retracted (actuator stem)	Long pulse - Short pulse
		Fully extended (actuator stem)	Short pulse - Long pulse
		Intermediate position	Long pulses
		Moving	Short pulses
		Calibrating	2 short pulses
		Manual mode or no power supply	Off

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

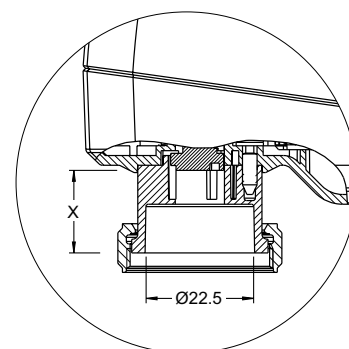
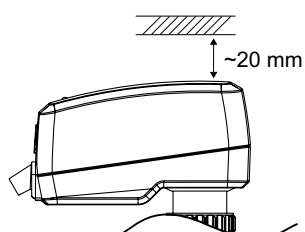
If an error is detected, violet pulses are displayed as the red or blue status lights flash alternately. More detailed information, please see the HyTune app + TA-Dongle.



## Installation

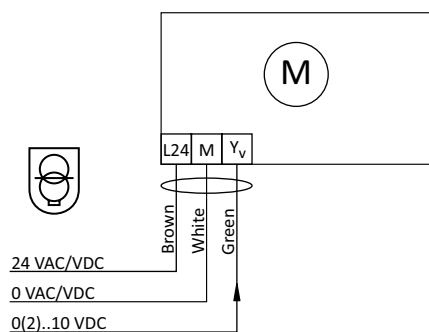
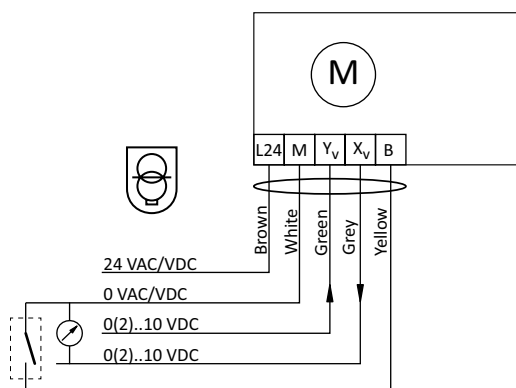
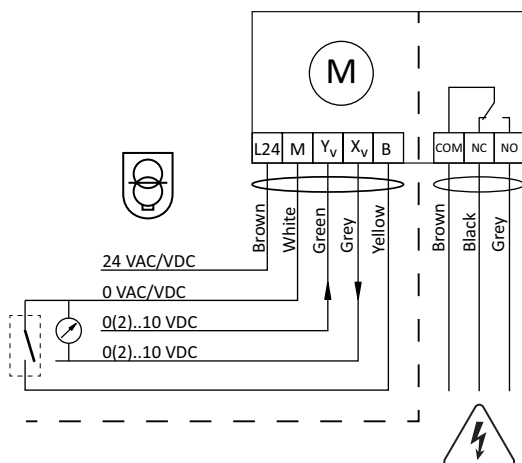


### Note!



X = 10.0 - 16.9

## Connection diagram

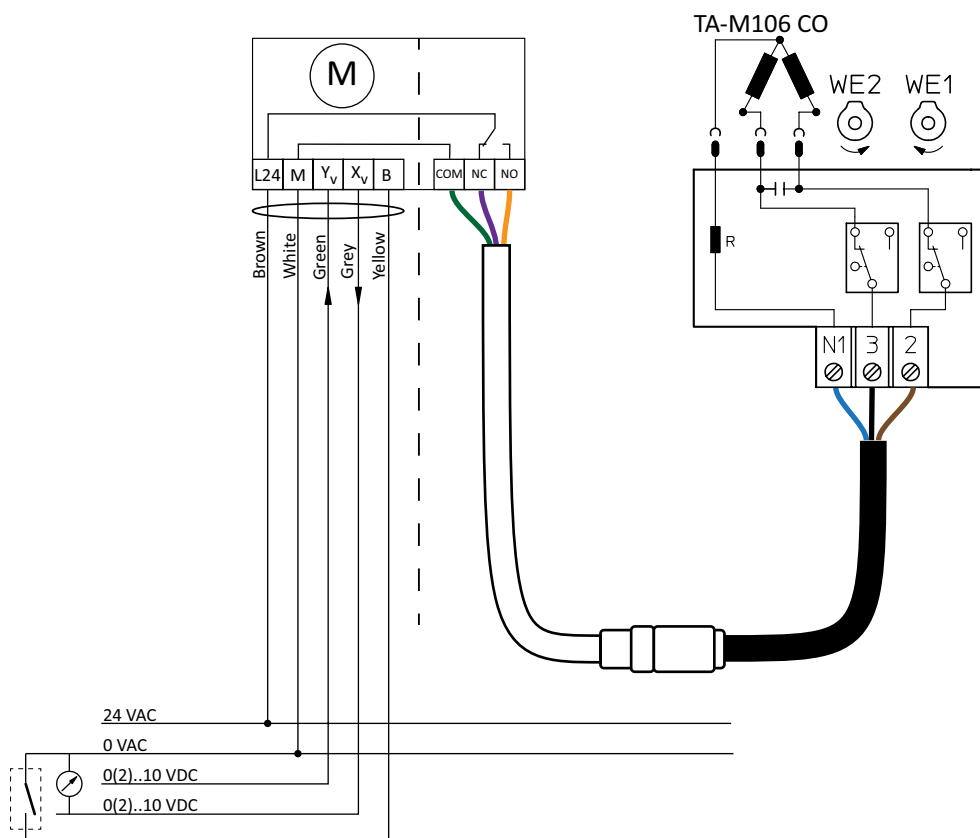
**TA-Slider 160**

**TA-Slider 160 I/O**

**TA-Slider 160 Plus**


Terminal	Description
L24	Power supply 24 VAC/VDC (CO: 24 VAC)
M	Neutral for power supply 24 VAC/VDC (CO: 24 VAC) and signals.
Y <sub>v</sub>	Input signal for proportional control 0(2)-10 VDC, 47 kΩ
X <sub>v</sub>	Output signal 0(2)-10 VDC, max. 8 mA or min. load resistance 1.25 kΩ
B	Connection for potential free contact (e.g. open window detection), max. 100 Ω, max. 10 m cable or shielded
COM	Common relay contact; Plus: max. 250 VAC, max. 5A @ 250 VAC on resistive load, max. 5A @ 30 VDC on resistive load. CO: to connect TA-M106 actuator
NC	Normally closed contact for relay
NO	Normally open contact for relay



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

### TA-Slider 160 CO

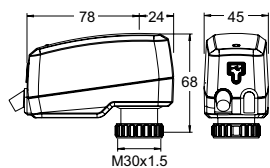


Terminal	Description
L24	Power supply 24 VAC/VDC (CO: 24 VAC)
M	Neutral for power supply 24 VAC/VDC (CO: 24 VAC) and signals.
$Y_v$	Input signal for proportional control 0(2)-10 VDC, 47 k $\Omega$
$X_v$	Output signal 0(2)-10 VDC, max. 8 mA or min. load resistance 1.25 k $\Omega$
B	Connection for potential free contact (e.g. open window detection), max. 100 $\Omega$ , max. 10 m cable or shielded
COM	Common relay contact; Plus: max. 250 VAC, max. 5A @ 250 VAC on resistive load, max. 5A @ 30 VDC on resistive load. CO: to connect TA-M106 actuator
NC	Normally closed contact for relay
NO	Normally open contact for relay



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

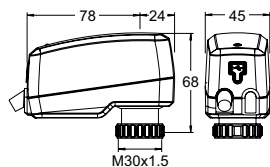
## Articles – TA-Slider 160

**TA-Slider 160**

Input signal: 0(2)-10 VDC

Cable length [m]	Supply voltage	EAN	Article No
1	24 VAC/VDC	5901688828397	322224-10111
2	24 VAC/VDC	5901688828403	322224-10112
5	24 VAC/VDC	5901688828410	322224-10113
<b>With halogen free cable</b>			
1	24 VAC/VDC	5901688828427	322224-10114
2	24 VAC/VDC	5901688828434	322224-10115
5	24 VAC/VDC	5902276883323	322224-10116

## Articles – TA-Slider 160 I/O

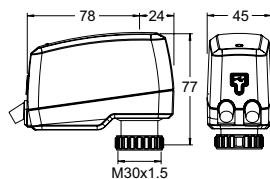
**TA-Slider 160 I/O**

Input signal: 0(2)-10 VDC

With binary input, VDC output signal

Cable length [m]	Supply voltage	EAN	Article No
1	24 VAC/VDC	5902276895951	322224-10411
2	24 VAC/VDC	5902276895968	322224-10412
5	24 VAC/VDC	5902276895975	322224-10413
<b>With halogen free cable</b>			
1	24 VAC/VDC	5902276895982	322224-10414
2	24 VAC/VDC	5902276895999	322224-10415
5	24 VAC/VDC	5902276896002	322224-10416

## Articles – TA-Slider 160 Plus

**TA-Slider 160 Plus**

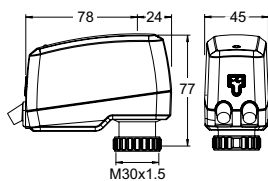
Input signal: 0(2)-10 VDC

With binary input, relay, VDC output signal

Cable length [m]	Supply voltage	EAN	Article No
1	24 VAC/VDC	5902276883330	322224-10211
2	24 VAC/VDC	5902276883347	322224-10212
5	24 VAC/VDC	5902276883354	322224-10213
<b>With halogen free cable</b>			
1	24 VAC/VDC	5902276883361	322224-10214
2	24 VAC/VDC	5902276883378	322224-10215
5	24 VAC/VDC	5902276883385	322224-10216



## Articles – TA-Slider 160 CO



### TA-Slider 160 CO

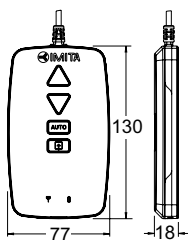
Input signal: 0(2)-10 VDC

With binary input, relay with connector to TA-M106 actuator, VDC output signal

Cable length [m]	Relay cable length* [m]	EAN	Article No
1	1,5	5901688823477	322224-10511
2	1,5	5901688823484	322224-10512
5	1,5	5901688823491	322224-10513
<b>With halogen free cable</b>			
1	1,5	5901688823507	322224-10514
2	1,5	5901688823514	322224-10515
5	1,5	5901688823521	322224-10516

\*) 1,5 m cable length for TA-M106 gives a total cable length of 3 m for all models.

## Additional equipment



### TA-Dongle

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

EAN	Article No
5901688828632	322228-00001

