

TA-Slider 160



Actuators

Digitally configurable proportional push actuator – 160/200 N

*Engineering
GREAT Solutions*

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
Stroke detection
Mode, status and position indication
Stroke limitation setting
Valve blockage protection
Valve clogging detection
Error safe position
Diagnostic/Logging

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 \pm 15%.
Frequency 50/60 Hz \pm 3 Hz.
CO version:
24 VAC \pm 15%.
Frequency 50/60 Hz \pm 3 Hz.

Power consumption:

Operation: < 1.0 VA (VAC); < 0.6 W (VDC)
Standby: < 0.5 VA (VAC); < 0.25 W (VDC)
I/O version:
Operation: < 1.3 VA (VAC); < 0.7 W (VDC)
Standby: < 0.5 VA (VAC); < 0.25 W (VDC)
Plus, CO versions:
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_i 47 k Ω .
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 or
2-4.7 / 7.3-10 VDC.
Default setting: Proportional 0-10 VDC.

Output signal:

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

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)

Cable:

1, 2 or 5 m. With wire end sleeves.
Halogen free as option.
TA-Slider 160: type LiYY, 3x0.25 mm².
TA-Slider 160 I/O: type LiYY, 5x0.25 mm².
TA-Slider 160 Plus: type LiYY, 5x0.25 mm² and relay cable type H03VV-F, 3x0.75 mm², with wire end sleeves.
TA-Slider 160 CO: type LiYY, 5x0.25 mm² and relay cable type LiYY, 3x0.34 mm², with connector to actuator TA-M106.

Stroke:

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

Noise level:

Max. 30 dBA

Weight:

TA-Slider 160, I/O:
 0.20 kg, 1 m relay cable.
 0.25 kg, 2 m relay cable.
 0.38 kg, 5 m relay cable.
 TA-Slider 160 Plus, CO:
 0.28 kg, 1 m relay cable.
 0.38 kg, 2 m relay cable.
 0.67 kg, 5 m relay cable.

Connection to valve:

Swivelling nut M30x1,5.

Material:

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

Colour:

White RAL 9016, grey RAL 7047.

Marking:

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

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:

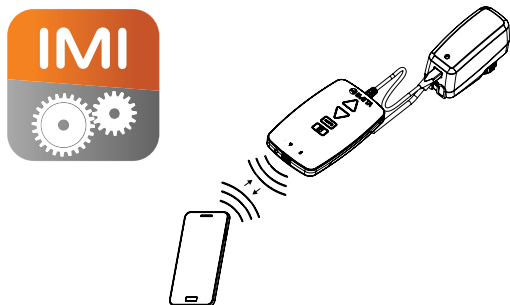
EN 60730.

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.


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

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

For some TA/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 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.

I/O, Plus and CO versions:
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

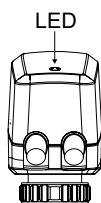
Switching between two different stroke limitation settings by toggling the binary input or using the dual-range input signal.

LED indication

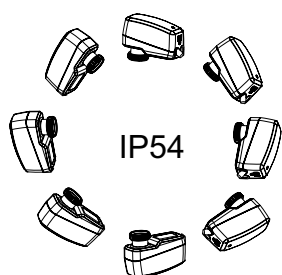
		Status	Red (heating) / Blue (cooling)
		Fully retracted (actuator stem)	Long pulse - Short pulse
		Fully extended (actuator stem)	Short pulse - Long pulse
		Intermediate position	Long pulses
		Moving	Short pulses
		Calibrating	2 short pulses
		Manual mode or no power supply	Off

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

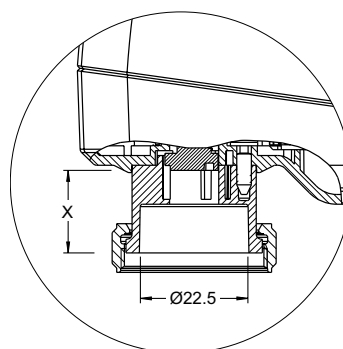
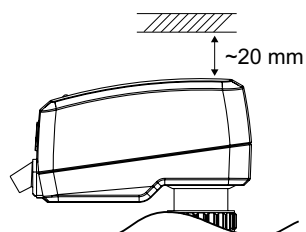
If an error is detected, violet pulses are displayed as the red or blue status lights flash alternately. More detailed information, please see the HyTune app + TA-Dongle.



Installation



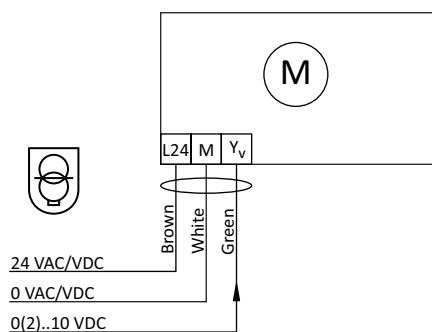
Note!



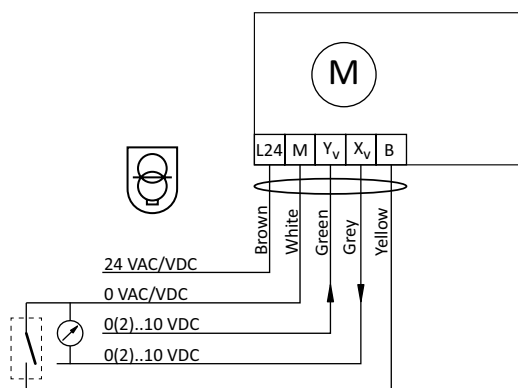
$$X = 10.0 - 16.9$$

Connection diagram

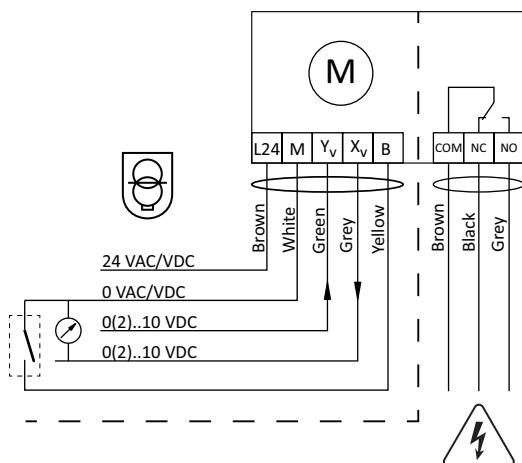
TA-Slider 160



TA-Slider 160 I/O



TA-Slider 160 Plus

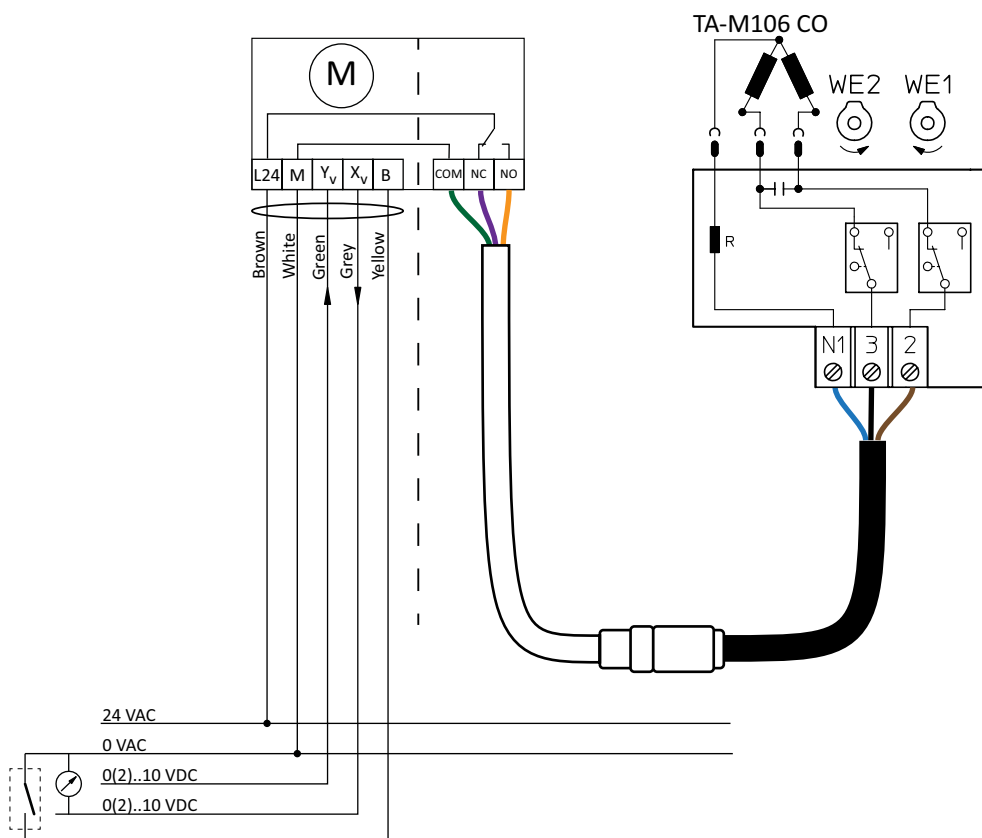


Terminal	Description
L24	Power supply 24 VAC/VDC (CO: 24 VAC)
M	Neutral for power supply 24 VAC/VDC (CO: 24 VAC) and signals.
Y _v	Input signal for proportional control 0(2)-10 VDC, 47 kΩ
X _v	Output signal 0(2)-10 VDC, max. 8 mA or min. load resistance 1.25 kΩ
B	Connection for potential free contact (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.

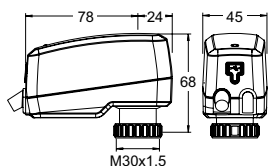
TA-Slider 160 CO



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 Ω
X_v	Output signal 0(2)-10 VDC, max. 8 mA or min. load resistance 1.25 k Ω
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.

Articles – TA-Slider 160

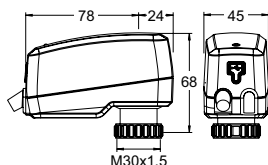


TA-Slider 160

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
With halogen free cable			
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



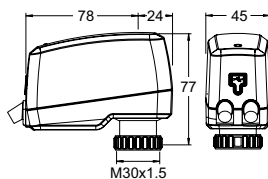
TA-Slider 160 I/O

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
With halogen free cable			
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



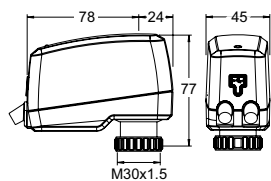
TA-Slider 160 Plus

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
With halogen free cable			
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



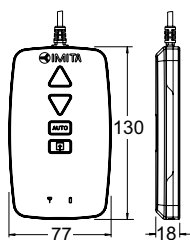
TA-Slider 160 CO

Input signal: 0(2)-10 VDC

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

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

Additional equipment



TA-Dongle

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

EAN	Article No
5901688828632	322228-00001