

Climate  
Control

IMI TA

## TA-Slider 160 Fail-safe



### Actuators

Digitally configurable proportional push actuator with electronic fail-safe function – 160/200 N

# TA-Slider 160 Fail-safe

Digitally configurable fail-safe 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

### Fully configurable fail-safe

Setting of stroke position (extended, retracted or intermediate position) and delay feature for entering/leaving fail-safe mode for a reliable and optimal fail-safe function.

### 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 and health check of fail-safe function.

### Quick copying of settings

Setup configuration can be copied quickly from the TA-Dongle to identical TA-Slider actuators.

## Technical description

### Functions:

- Electronic fail-safe function
- 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  $\Omega$ , cable max. 10 m or shielded.
- + Output signal

### R24 version:

- + 1 binary input, max. 100  $\Omega$ , cable max. 10 m or shielded.
- + 1 relay, max. 1A, 30 VAC/VDC on resistive load.
- + Output signal

### Fail-safe function:

Programmable actuator's stem extended, retracted or intermediate position on power failure.

### Supply voltage:

24 VAC/VDC  $\pm 15\%$ .  
Frequency 50/60 Hz  $\pm 3$  Hz.

### Power consumption:

Peak: < 6.6 VA (VAC); < 3.2 W (VDC)  
Operation: < 2.0 VA (VAC); < 0.9 W (VDC)  
Standby: < 1.4 VA (VAC); < 0.45 W (VDC)  
Peak consumption occurs for a short period after a power cut for recharging capacitors.

### Input signal:

0(2)-10 VDC,  $R_i$  47 k $\Omega$ .  
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:

0(2)-10 VDC, max. 8 mA, min. 1.25 k $\Omega$ .  
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:**

10 s/mm

**Fail-safe delay:**

Adjustable between 0 and 10 seconds.

Default setting: 2 s

**Power supply stabilisation delay:**

Adjustable between 1 and 5 seconds.

Default setting: 2 s

**Pre-charging time:**

< 20 s

**Adjusting force:**

160/200 N

Self-adjusting for IMI TA/IMI Heimeier valves.

**Temperature:**

Media temperature: max. 120°C

Operating environment: 0°C – +50°C  
(5-95%RH, non-condensing)

Storage environment: -20°C – +50°C  
(5-95%RH, non-condensing)

**Ingress protection:**

IP54 (all directions)

(according to EN 60529)

**Protection class:**

(according to EN 61140)

III (SELV)

**Cable:**

1, 2 or 5 m.

Halogen free with wire end sleeves.

Fire class B<sub>2ca</sub> – s1a, d1, a1 according to EN 50575.

Type LiYY, 5x0.25 mm<sup>2</sup>.

Relay cable (R24 version):

1, 2 or 5 m.

Halogen free with wire end sleeves.

Fire class B<sub>2ca</sub> – s1a, d1, a1 according to EN 50575.

Type LiYY, 3x0.34 mm<sup>2</sup>.

**Stroke:**

6,9 mm.

Automatic detection of the valve lift (stroke detection).

**Noise level:**

Max. 30 dBA

**Weight:**

I/O:

0,20 kg, 1 m.

0,25 kg, 2 m.

0,38 kg, 5 m.

R24:

0,28 kg, 1 m.

0,38 kg, 2 m.

0,67 kg, 5 m.

**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.

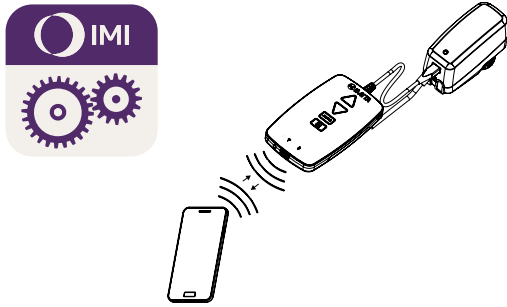
**Product standard:**

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.



### 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 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.

### Fail-safe

Goes to a pre-defined position when power supply is lost. Pre-defined position settable to any position and delay before entering fail-safe mode after a power off settable between 0 and 10 seconds.  
Default setting: Fully retracted and 2 seconds delay.

Going back to normal operation when power is back for more than a power supply stabilization delay settable between 1 and 5 seconds.  
Default setting: 2 seconds.

Capacitor charge/health level of the fail-safe function is indicated by the colour of the fail-safe LED. A complete health check of the fail-safe function can be launched with the HyTune app.

### 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

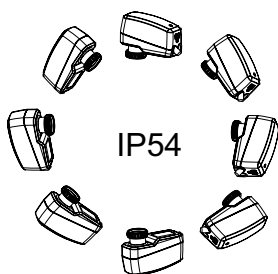
		Error code	Violet
		Power supply too low	1 pulse
		Line broken (2-10 V)	2 pulses
		Valve clogging or foreign object	3 pulses
		Stroke detection failure	4 pulses

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.

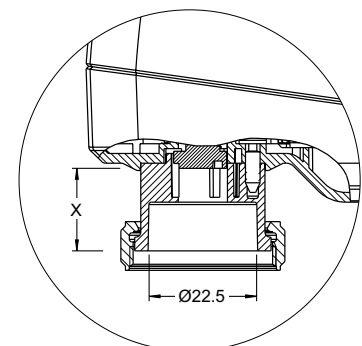
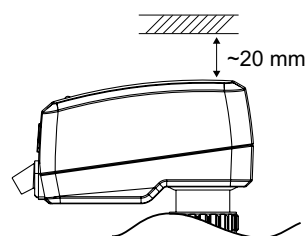


Fail-safe LED	Capacitor charge
Green	Good
Orange	Partial, fail-safe operation still possible
Red	Too low, fail-safe operation not assured

## Installation

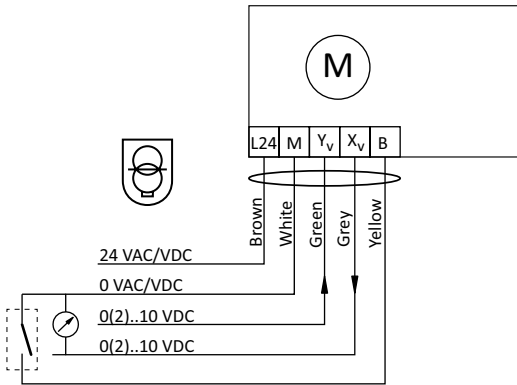
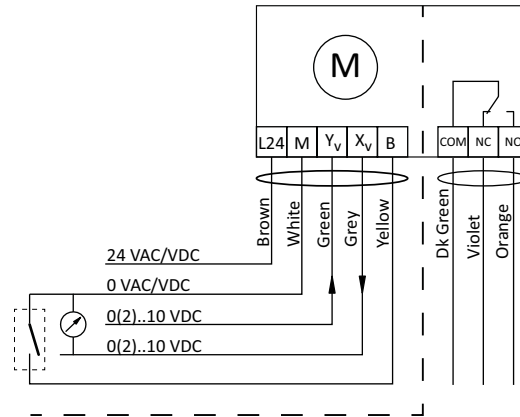


### Note!



X = 10.0 - 16.9

## Connection diagram

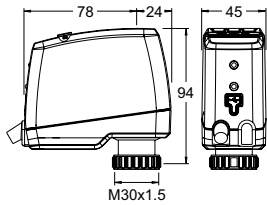
**TA-Slider 160 Fail-safe I/O**

**TA-Slider 160 Fail-safe R24**


Terminal	Description
L24	Power supply 24 VAC/VDC
M	Neutral for power supply 24 VAC/VDC 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	R24 version: Common relay contact, max. 1A @ 30 VAC/VDC on resistive load
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 Fail-safe I/O



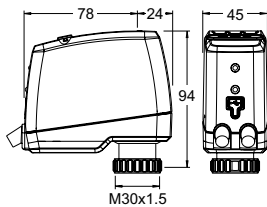
### TA-Slider 160 Fail-safe I/O

Input signal: 0(2)-10 VDC

With binary input, VDC output signal

Cable length [m]	Supply voltage	EAN	Article No
<b>With halogen free cable</b>			
1	24 VAC/VDC	5902276898709	322224-10614
2	24 VAC/VDC	5902276898716	322224-10615
5	24 VAC/VDC	5902276898723	322224-10616

## Articles – TA-Slider 160 Fail-safe R24



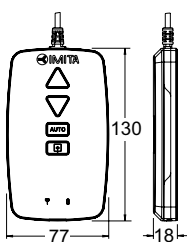
### TA-Slider 160 Fail-safe R24

Input signal: 0(2)-10 VDC

With binary input, VDC output signal and relay R24

Cable length [m]	Supply voltage	EAN	Article No
<b>With halogen free cable</b>			
1	24 VAC/VDC	5902276898730	322224-10714
2	24 VAC/VDC	5902276898747	322224-10715
5	24 VAC/VDC	5902276898754	322224-10716

## Additional equipment



### TA-Dongle

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

EAN	Article No
5901688828632	322228-00001



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