

# TA-Slider 500 T-2T



## Actuators

Digitally configurable proportional push-pull actuator with temperature measurement capability – 500/300 N

# TA-Slider 500 T-2T

Digitally configurable actuators with temperature measurement capability and operation, to be used as a terminal unit actuator mounted on a PIBCV for tackling  $\Delta T$  syndrome or for handling changeover based on T supply or  $\Delta T$  sign detection. 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.
- > **Optional  $\Delta T$  and temperature return limitation**  
Optimize the efficiency of your production units by ensuring optimal temperature regimes.
- > **Change-over functionality**  
Switch between heating/cooling flows according to input signal or automatically using T supply or  $\Delta T$  sign detection.
- > **Easy diagnostics**  
Tracks the last 10 errors to allow system faults to be found quickly.
- > **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  
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  
 $\Delta T$  and temperature return limitation  
Reading (supply/return temperature,  $\Delta T$ , position)  
Automatic change-over function

### T version:

+ 1 pre-mounted PT1000 to be inserted in valve measuring point.  
+ 1 binary input, max. 100  $\Omega$ , cable max. 10 m or shielded.  
+ Output signal

### 2T version:

+ 1 pre-mounted cable with possibility to connect 2 PT1000 (see section "Sensors")  
+ 1 binary input, max. 100  $\Omega$ , cable max. 10 m or shielded.  
+ Output signal

### Supply voltage:

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

### Power consumption:

Operation: < 3.6 VA (VAC); < 1.7 W (VDC)  
Standby: < 1.3 VA (VAC); < 0.6 W (VDC)

### Input signal:

0(2)-10 VDC, R, 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:

4 or 6 s/mm.  
Default setting: 4 s/mm.

### Adjusting force:

Push 500 N  
Pull 300 N

### 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)

### Measurement accuracy:

Temperature pocket: Class AA  
In valve measuring point: Class B  
Surface mounted: Class B

### Absolute temperature:

PT1000 Class AA:  $\pm 0.1^\circ\text{C}$  at 0°C  
PT1000 Class B:  $\pm 0.3^\circ\text{C}$  at 0°C

### Time constant $\tau$ (63%):

In valve measuring point: 5s  
Temperature pocket: 9s  
Surface mounted: 20s

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**Ingress protection:**

IP54 all directions  
(according to EN 60529)

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**Protection class:**

(according to EN 61140)  
III (SELV)

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**Cable:**

1, 2 or 5 m.  
Halogen free with wire end sleeves.  
Fire class B2<sub>ca</sub> – s1a, d1, a1 according to  
EN 50575.  
Type LiYY, 5x0.25 mm<sup>2</sup>.

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**Temperature sensor cable:**

Halogen free, fire class IEC 60332-3-24  
(cat. C).  
T version: Length 160 mm.  
2T version: Length, see section  
“Sensors”.

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**Stroke:**

16,2 mm

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**Noise level:**

Max. 30 dBA

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**Weight:**

TA-Slider 500 T:  
0.29 kg, 1 m cable  
0.34 kg, 2 m cable  
0.49 kg, 5 m cable  
TA-Slider 500 2T:  
0.34 kg, 1 m cable  
0.39 kg, 2 m cable  
0.54 kg, 5 m cable

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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.  
Cables: Halogen free

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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 63000.

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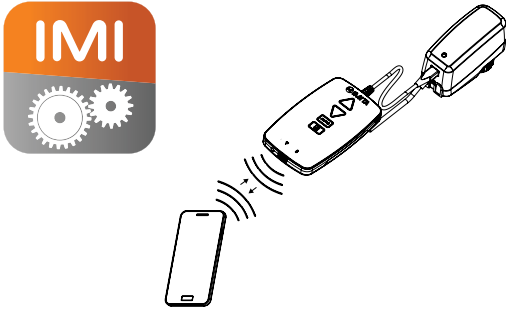
**Product standard:**

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.

### 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.

### 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.

### Change-over system detection

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

### ΔT and temperature return limitation

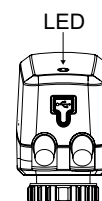
Ensure your terminal unit installation is properly balanced and optimize the efficiency of your production units by ensuring optimal temperature regimes.

## LED indication

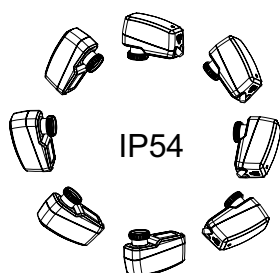
	Status	Red (heating) / Blue (cooling)
	— — — —	Long pulse - Short pulse
	— — — —	Short pulse - Long pulse
	— — — —	Long pulses
	— — — —	Short pulses
	— — — —	2 short pulses
		Off

	Error code	Violet
	- - -	1 pulse
	- - -	2 pulses
	- - - -	3 pulses
	- - - -	4 pulses

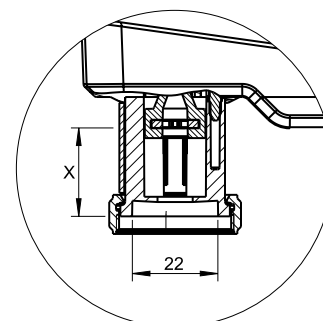
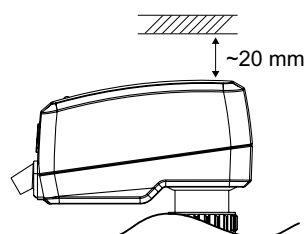
If an error is detected, violet pulses are displayed as the red or blue status lights flash alternately. More detailed information, please see the HyTune app + TA-Dongle.



## Installation



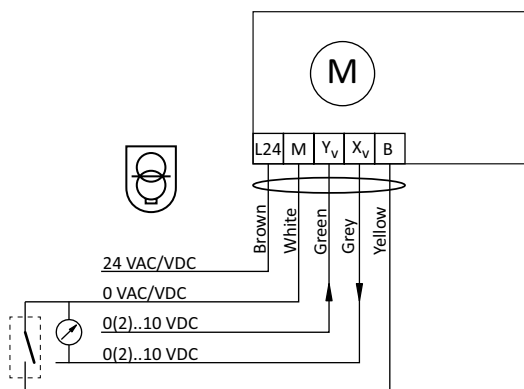
**Note!**



X = 7.7 - 23.9 mm

## Connection diagram

### TA-Slider 500 T-2T



Terminal	Description
L24	Power supply 24 VAC/VDC
M	Neutral for power supply 24 VAC/VDC 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



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

## Sensors

For applications that require only one temperature measurement, the T version is suitable, as it comes equipped with an integrated sensor. **No additional temperature sensors are necessary.**

For applications where two temperature measurements are necessary, order the 2T version along with two temperature sensors. IMI offers a range of temperature sensors that are compatible with the actuator. Note that the sensors do not have to be of the same type. For article numbers see section "Sensors".

### Insertion in temperature pocket

Sensor type: PT1000, Ø 5 mm, 3 m cable.

Pocket length [mm]	Cable length [mm]	For pipe DN			
		10-25	32-50	65-80	100-400
25	3000	X			
40	3000		X		
70	3000			X	
100	3000				X

### Insertion in valve measuring point

Sensor type: PT1000, Ø 3 mm, 3 or 5 m cable.

Sensor length [mm]	Cable length [mm]	TA-Modulator DN 10-50	TBV-CM DN 15-25	TA-COMPACT -P/-DP DN 10-32	STAD DN 10-50	STAF/ STAF-SG DN 65-125	STAF/ STAF-SG DN 150	STAF-SG DN 200-250	STAF-SG DN 300-400
60	3000	X	X	X	X				
130	5000					X		X	
170	5000						X		X

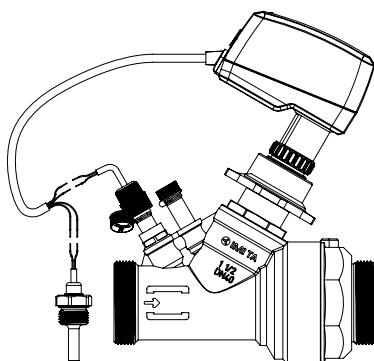
### Surface mounted temperature sensor

Sensor type: PT1000, 3 m cable.

## Examples

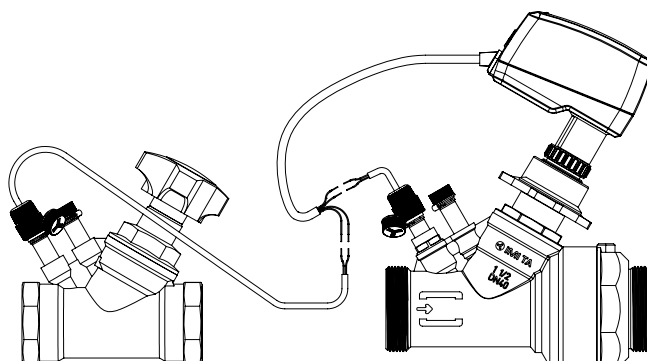
### TA-Modulator with 2T version

In this setup, 2 sensors should be ordered. One sensor is used for insertion in a measuring point, and another sensor is inserted into a temperature pocket.

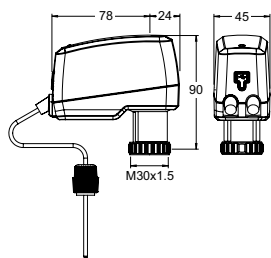


### TA-Modulator with 2T version and STAD

In this setup, 2 sensors should be ordered. One sensor is used for measuring point in TA-Modulator, and another sensor is inserted into the measuring point from STAD.



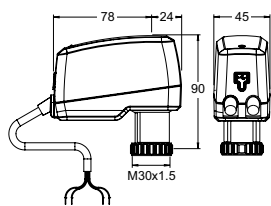
## Articles



### TA-Slider 500 T

Pre-mounted PT1000 for valve measuring point insertion.  
Input signal: 0(2)-10 VDC

Cable length	Sensor cable length	Supply voltage	EAN	Article No
1000	160	24 VAC/VDC	5902276820892	322225-10814
2000	160	24 VAC/VDC	5902276820908	322225-10815
5000	160	24 VAC/VDC	5902276820915	322225-10816

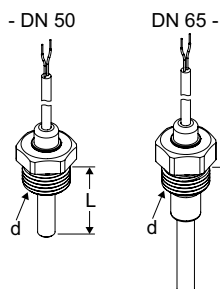


### TA-Slider 500 2T

Without pre-mounted PT1000. Sensors ordered separately.  
Input signal: 0(2)-10 VDC

Cable length	Sensor cable length	Supply voltage	EAN	Article No
1000	1000	24 VAC/VDC	5902276820922	322225-10914
2000	1000	24 VAC/VDC	5902276820939	322225-10915
5000	1000	24 VAC/VDC	5902276820946	322225-10916

## Sensors



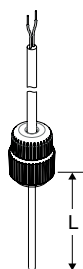
### Temperature pocket with sensor

PT1000

For mounting directly on pipe.

Free space >70 mm is required above the temperature sensor pocket.

For pipe DN	d	L	Cable length	EAN	Article No
10-25	G1/2	25	3000	5902276820748	322428-00020
32-50	G1/2	40	3000	5902276820755	322428-00521
65-80	G1/2	70	3000	5902276821745	322428-00621
100-400	G1/2	100	3000	5902276821738	322428-00721

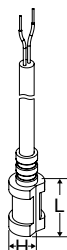


### Temperature sensor for valve measuring point

PT1000

Applicable to families: TA-Modulator, TBV-CM, TA-COMPACT-P/-DP, STAD, STAF/STAF-SG

For valve DN	L	Cable length	EAN	Article No
10-50	60	3000	5902276820786	322428-00122
65-250	130	5000	5902276820793	322428-00134
300-400 + STAF 150	170	5000	5902276820809	322428-00135



### Surface temperature sensor

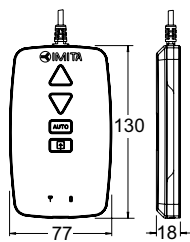
PT1000

For mounting directly on pipe surface.

H	L	Cable length	EAN	Article No
10	16	3000	5902276820816	322428-00429



## Additional equipment



### TA-Dongle

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

EAN	Article No
5901688828632	322228-00001

