Climate
Control

IMI TA

TA-Slider 500 Fail-safe

Actuators

Digitally configurable proportional push-pull actuator with electronic fail-safe function – 500/300 N

Breakthrough
engineering for
a better world

TA-Slider 500 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
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

R24 version:
+ 1 binary input, max. 100 Ω, 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 ±15%.
Frequency 50/60 Hz ±3 Hz.

Power consumption:
Peak: < 6.6 VA (VAC);
< 3.2 W (VDC)
Operation: < 3.6 VA (VAC);
< 1.8 W (VDC)
Standby: < 1.6 VA (VAC);
< 0.7 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 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:
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:
4 or 6 s/mm.
Default setting: 4 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:
< 40 s

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 – +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 $B2_{ca}$ – s1a, d1, a1 according to EN 50575.
Type LiYY, 5x0.25 mm^2.
Relay cable (R24 version):
1, 2 or 5 m.
Halogen free with wire end sleeves.
Fire class $B2_{ca}$ – s1a, d1, a1 according to EN 50575.
Type LiYY, 3x0.34 mm^2.

Stroke:
16,2 mm
Automatic detection of the valve lift (stroke detection).

Noise level:
Max. 30 dBA

Weight:
I/O:
0,23 kg, 1 m.
0,27 kg, 2 m.
0,40 kg, 5 m.
R24:
0,33 kg, 1 m.
0,44 kg, 2 m.
0,82 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.

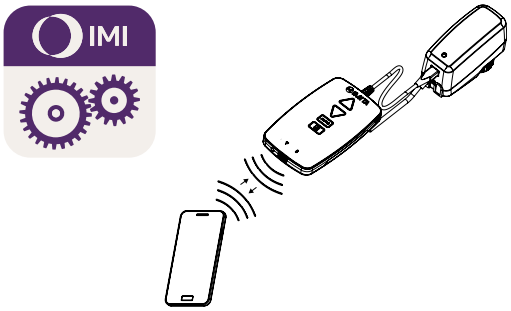
Marking:
Label: IMI TA, CE, product name, article No. and technical specification.

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.

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

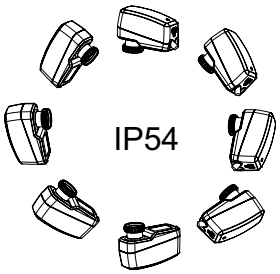
	Status	Red (heating) / Blue (cooling)
	Fully retracted (actuator stem)	Long pulse - Short pulse
	Fully extended (actuator stem)	Short pulse - Long pulse
	Intermediate position	Long pulses
	Moving	Short pulses
	Calibrating	2 short pulses
	Manual mode or no power supply	Off

	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

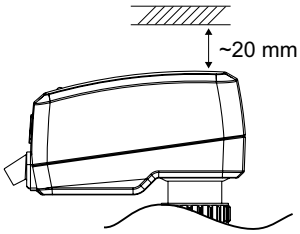
If an error is detected, violet pulses are displayed as the red or blue status lights flash alternately.
More detailed information, please see the HyTune app + TA-Dongle.

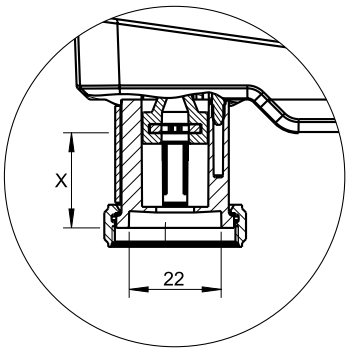
Fail-safe LED	Capacitor charge
Green	Good
Orange	Partial, fail-safe operation still possible
Red	Too low, fail-safe operation not assured

Installation



Note!

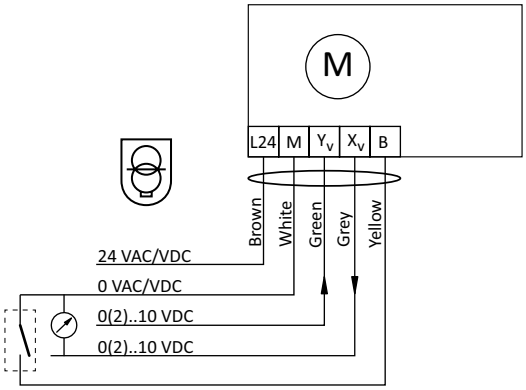




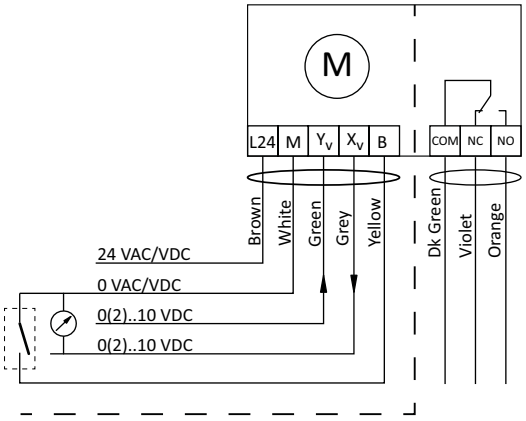
X = 10.0 - 16.9

Connection diagram

TA-Slider 500 Fail-safe I/O



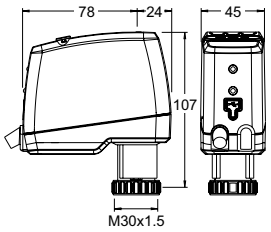
TA-Slider 500 Fail-safe R24



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 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	R24: 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 500 Fail-safe I/O

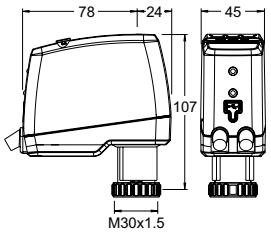


TA-Slider 500 Fail-safe I/O
Input signal: 0(2)-10 VDC

With binary input, VDC output signal

Cable length [m]	Supply voltage	EAN	Article No
With halogen free cable			
1	24 VAC/VDC	5902276898761	322225-10614
2	24 VAC/VDC	5902276898778	322225-10615
5	24 VAC/VDC	5902276898785	322225-10616

Articles – TA-Slider 500 Fail-safe R24

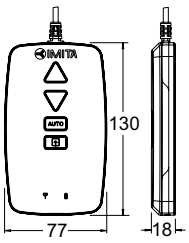


TA-Slider 500 Fail-safe R24
Input signal: 0(2)-10 VDC

With binary input, VDC output signal and relay 24V

Cable length [m]	Supply voltage	EAN	Article No
With halogen free cable			
1	24 VAC/VDC	5902276898792	322225-10714
2	24 VAC/VDC	5902276898808	322225-10715
5	24 VAC/VDC	5902276898815	322225-10716

Additional equipment



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

EAN	Article No
5901688828632	322228-00001