ETL500 Stepper

FLOW 0 - 3000 ml/min



HYDRAULIC DATA*

Tube bore (ID mm)	ML / REV**	100 RPM	400 RPM	600 RPM (interm. only)
0.5	0.025	2.5	10	15
0.8	0.07	7	30	50
1.6	0.3	30	120	180
3.2	1.00	100	400	600
4.8	2.10	210	840	1260
6.4	3.60	360	1440	2160
8.0	5.30	530	2120	3180

* Approximate values at free flow with Pharm-A-Clear® tubing and 3 roller configuration.
** Values calculated from 100 RPM.

ELECTRICAL DATA

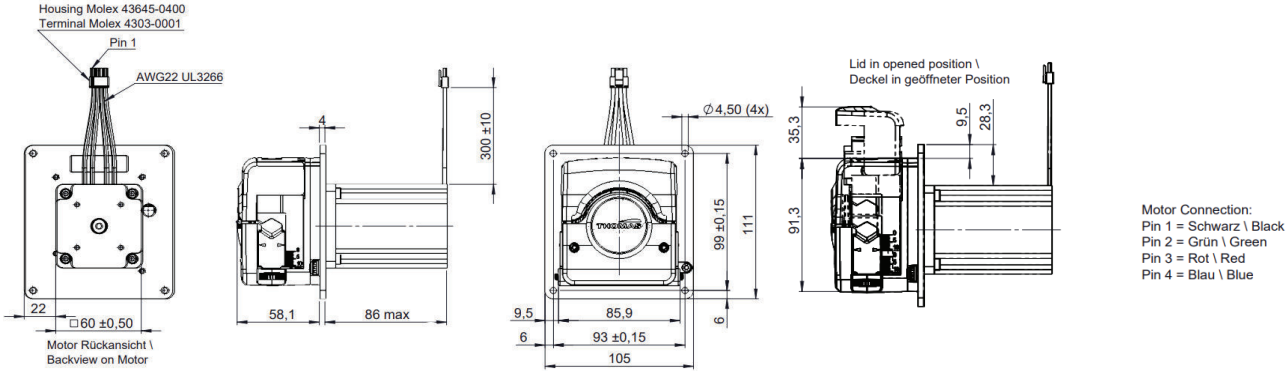
Motor type	2-phase bipolar stepper motor
Nominal voltage	Depending on driver board
Required driver	Bipolar, up to 4.2 A*
Motor speed	0-600 rpm
Operation	CW/CCW
Max. recommended motor speed continuous operation	400 rpm
Max. power consumption	22 W
Motor insulation class	B
Inductance at 1 kHz, 1V	2.2 mH
Winding resistance	0.61 Ω

* For most peristaltic applications the current draw will not exceed 2.8 A

GENERAL DATA*

Pump type	Single-channel peristaltic pump
Media temperature	5 - 80 °C, consider tube temp. range
Ambient temperature	10 - 45 °C
Storage temperature	-30 to +70 °C
Max. continuous system pressure	2 bar
Max. vacuum	95%
Weight	1900 g

DIMENSIONAL DRAWING



MODEL KEY

Pos	Options	Description
1	ETL500	Product Line
2	F	**F**luid / liquid
3	0 / 1	Tubing: without tubing (**0**), with tubing (**1**)
4	AT / FT	**A**djustable **T**ube Holders, **F**ixed **T**ube Holders
5	16 / 24	Designed for tube wall thickness 1,6 mm (**16**) or 2,4 mm (**24**)
6	NA / 0	Nominal Voltage **NA** = Not Applicable: nominal input voltage depends on control board; control board not included / **0** = pump head only
7	ST / 0	**St**epper Motor / **0** = pump head only
8	0600 / 0	Motor speed: **0-600** rpm stepper motor (external control board required) / **0** = pump head only
9	AP / 0	**A**dapter **P**late included / **0** = no adapter plate
10	MP / 0	**M**ounting **P**late included / **0** = no mounting plate
11	3 / 4	Number of rollers: **3** rollers or **4** rollers
12	LT / MT / ST / LST	Occlusion setting for tube specification: Large Tubing (PHI-8.0X1.6, PHI-6.4X1.6, PHI-4.8X1.6 PLTS-LH-4.8X1.6) Large Silicone Tubing (PLTS-LH-8.0x1.6, PLTS-LH-6.4x1.6) Medium Tubing (PHI-3.2X1.6, PHI-1.6X1.6, PLTS-LH-3.2X1.6, PLTS-LH-1.6X1.6) Medium Tubing (PHI-3.2X1.6, PHI-1.6X1.6, PLTS-LH-3.2X1.6, PLTS-LH-1.6X1.6) Small Tubing (PHI-0.8X1.6, PHI-0.5X1.6, PLTS-LH-0.8x1.6, PLTS-LH-0.5x1.6)

ORDER INFORMATION

Part Number	Model Key
59997520	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-3-ST
59997530	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-4-ST
59997540	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-3-MT
59997550	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-4-MT
59997560	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-3-LT
59997570	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-4-LT
59997580	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-3-LST
59997590	ETL500-F-0-AT-16-NA-ST-0600-AP-MP-4-LST
Other configurations	Upon request
To order call	ASIA +86 510 6878 2258
To order call	EMEA +49 8141 22800
To order call	USA +1 920 457 4891
Or go online @	https://www.thomaspumps.com/

OPTIONS

Fixed tube setting (no adjustment wheel)
Custom colors
Pump model for thick wall (2.4 mm) tubing
Lid opening sensor
Custom occlusion setting based on customer specification
Pump head only (see separate data sheet)
Control board (39999740), potentiometer (39999750), motor cable (39999720)

The information presented in this material is based on technical data and test results of nominal units. It is believed to be accurate and reliable and is offered as an aid to help in the selection of Thomas products. It is the responsibility of the user to determine the suitability of the product for the intended use and the user assumes all risk and liability whatsoever in connection therewith. Thomas does not warrant, guarantee or assume any obligation or liability in connection with this information.

ETL500 Pump Head

FLOW 0 - 3000 ml/min



HYDRAULIC DATA*

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* Approximate values at free flow with Pharm-A-Clear® tubing and 3 roller configuration.

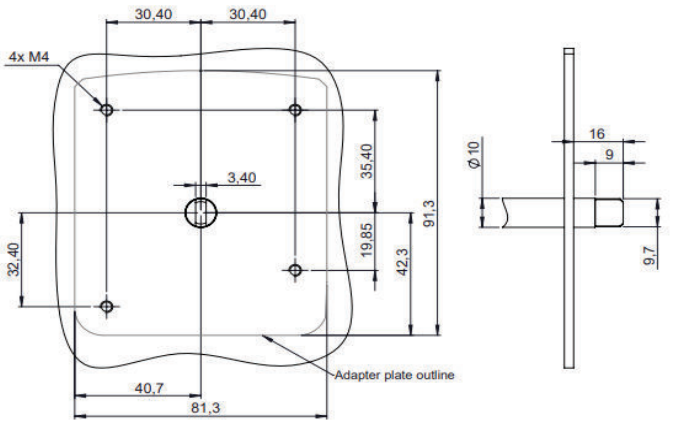
** Values calculated from 100 RPM.

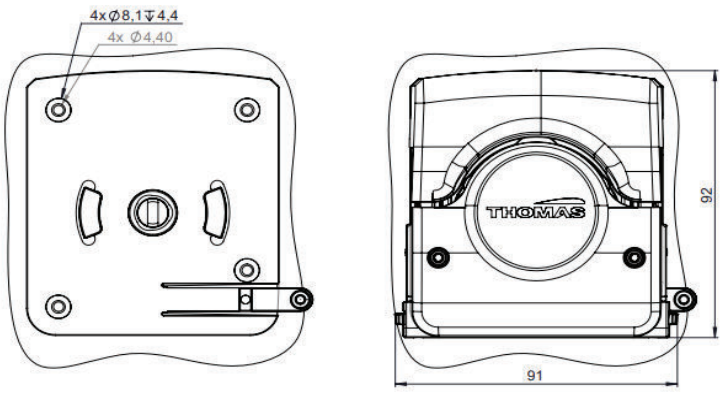
GENERAL DATA

Pump type	Single-channel peristaltic pump
Max. torque required*	300 mNm
Media temperature	5 - 80 °C
Ambient temperature	10 - 45 °C
Storage temperature	-30 to +70 °C
Max. motor speed continuous operation	400 rpm
Max. motor speed intermittent operation	600 rpm
Max. continuous system pressure	2 bar
Max. vacuum	95%
Weight	400 g

* Measured with PHI-8.0X1.6 tube, 600 rpm, 1.3 bar, starting torque can be up to 2x the mean value stated above, torques for other scenarios available on request.

DIMENSIONAL DRAWING





MODEL KEY

Pos	Options	Description
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2	F	**F**luid / liquid
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6	NA / 0	Nominal Voltage **NA** = Not Applicable: nominal input voltage depends on control board; control board not included / **0** = pump head only
7	ST / 0	**St**epper Motor / **0** = pump head only
8	0600 / 0	Motor speed: **0-600** rpm stepper motor (external control board required) / **0** = pump head only
9	AP / 0	**A**dapter **P**late included / **0** = no adapter plate
10	MP / 0	**M**ounting **P**late included / **0** = no mounting plate
11	3 / 4	Number of rollers: **3** rollers or **4** rollers
12	LT / MT / ST / LST	Occlusion setting for tube specification: **L**arge **T**ubing (PHI-8.0X1.6, PHI-6.4X1.6, PHI-4.8X1.6, PLTS-LH-4.8X1.6) **L**arge **S**ilicone **T**ubing (PLTS-LH-8.0x1.6, PLTS-LH-6.4x1.6) **M**edium **T**ubing (PHI-3.2X1.6, PHI-1.6X1.6, PLTS-LH-3.2X1.6, PLTS-LH-1.6X1.6) **S**mall **T**ubing (PHI-0.8X1.6, PHI-0.5X1.6, PLTS-LH-0.8x1.6, PLTS-LH-0.5x1.6)

ORDER INFORMATION

Part Number	Model Key
59997420	ETL500-F-0-AT-16-0-0-0-AP-0-3-ST
59997430	ETL500-F-0-AT-16-0-0-0-AP-0-4-ST
59997440	ETL500-F-0-AT-16-0-0-0-AP-0-3-MT
59997450	ETL500-F-0-AT-16-0-0-0-AP-0-4-MT
59997460	ETL500-F-0-AT-16-0-0-0-AP-0-3-LT
59997470	ETL500-F-0-AT-16-0-0-0-AP-0-4-LT
59997480	ETL500-F-0-AT-16-0-0-0-AP-0-3-LST
59997490	ETL500-F-0-AT-16-0-0-0-AP-0-4-LST
Other configurations	Upon request
To order call	ASIA +86 510 6878 2258
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Fixed tube setting (no adjustment wheel)
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Tubing for ETL500

CONTINUOUS TUBING Pharm-A-Line™



CONTINUOUS TUBING Pharm-A-Clear®



TUBING PROPERTIES

Tube	Characteristics	Limitations
Pharm-A-Line™	Thermoplastic vulcanite (TPV) Excellent lifetime Excellent pump performance Excellent chemical resistance Tasteless / odorless Low particle spallation Contains no phthalate plasticizers or peroxides that can leach out into transported fluid Suitable for higher pressures Sterilization methods: autoclave, gamma irr., chem. sterilants Biocompatible Medium temperature range -51°C - 132°C	Not translucent - opaque
Pharm-A-Clear®	Platinum cured silicone Good lifetime (compared to other silicone materials) Translucent - good clarity Tasteless / odorless Contains no phthalate plasticizers or peroxides that can leach out into trasported fluid Suitable for lower pressures Sterilization methods: autoclave, gamma irr., EtO, chem. sterilants Biocompatible Medium temperature range -67°C - 220°C	Not recommended with strong acids or alkaline solutions Swells up in many organic solutions Suitable for lower pressures

CHEMICAL RESISTANCE AND STANDARDS

		Pharm-A-Line™	Pharm-A-Clear®
Acids	weak medium strong	very good good not recommended	good unsatisfactory not recommended
Alkaline solution	weak medium strong	very good very good good	good unsatisfactory not recommended
Hydrocarbons	aliphatic aromatized halogenated	not recommended	
Standards / physiological behavior		USP, class VI ISO 10993 Parts 4,5 FDA (21 CFR 177.2600) BSE/TSE REACH RoHs	physiologically inert USP, class VI ISO 10993 (various parts) Animal Derived Ingredient Free (ADIF) FDA (21 CFR 177.2600)
Chemical structure		thermoplastic elastomer on PP-basis	platinum cured silicone

ORDER TABLE

Part Number	Tube Material	Tube Name	Inner Diameter [mm]	Wall Thickness [mm]	Package Size
PLTS-LH-8.0X1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	8.0 mm	1.6 mm	15 m
PLTS-LH-6.4X1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	6.4 mm	1.6 mm	15 m
PLTS-LH-4.8X1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	4.8 mm	1.6 mm	15 m
PLTS-LH-3.2X1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	3.2 mm	1.6 mm	15 m
PLTS-LH-1.6X1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	1.6 mm	1.6 mm	15 m
PLTS-LH-0.8X1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	0.8 mm	1.6 mm	15 m
PLTS-LH-0.5x1.6-15	Platinum Cured Silicone Tubing	Pharm-A-Clear®	0.5 mm	1.6 mm	15 m
PHI-8.0X1.6-15	BioPharma Grade TPE Tubing	Pharm-A-Line™	8.0 mm	1.6 mm	15 m
PHI-6.4X1.6-15	BioPharma Grade TPE Tubing	Pharm-A-Line™	6.4 mm	1.6 mm	15 m
PHI-4.8X1.6-15	BioPharma Grade TPE Tubing	Pharm-A-Line™	4.8 mm	1.6 mm	15 m
PHI-3.2X1.6-15	BioPharma Grade TPE Tubing	Pharm-A-Line™	3.2 mm	1.6 mm	15 m
PHI-1.6X1.6-15	BioPharma Grade TPE Tubing	Pharm-A-Line™	1.6 mm	1.6 mm	15 m
PHI-0.8X1.6-7.5	BioPharma Grade TPE Tubing	Pharm-A-Line™	0.8 mm	1.6 mm	7.5 m
PHI-0.5X1.6-10	BioPharma Grade TPE Tubing	Pharm-A-Line™	0.5 mm	1.6 mm	10 m

Orders need to be placed in meters in multiples of the package size. Minimum order quantity is the tube length of one package (i.e. 15 m).