E-Tech

EH DTm SERIES

HORIZONTAL MULTISTAGE PUMPS WITH DRIVE-TECH MINI

Franklin Electric

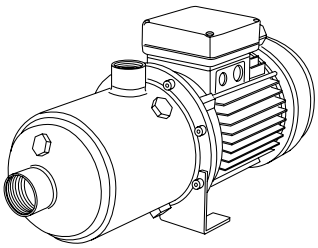
INDEX

NOTE: Franklin Electric S.r.l. reserves the right to amend specification without prior notice
For the most up-to-date product information, visit **franklinwater.eu**.

MENU

EH SERIES – STAINLESS STEEL HORIZONTAL MULTISTAGE PUMPS

APPLICATIONS



- Small domestic and industrial systems / Domestic water supply
- Water distribution / pressure boosting
- Irrigation / Gardening / Sprinklers / Rainwater collection
- Industrial plants / Wash down unit
- Cooling and chilling / Heating and conditioning / Air conditioning systems
- Other various installations

FEATURES

- Compact close-coupled design, robust and corrosion resistant / Superior efficiency and performances
- Flexible application base plate
- Floating neck ring in PPS
- Heavy duty oversize motor shaft
- Impellers and diffusers are made of stainless steel in order to achieve durability
- Easy maintenance
- Strong motor rolling bearing fitted in the motor bracket
- Pumping of clear non-loaded fluids
- Mechanical seal Type E0 = carbon/ceramic/EPDM

PUMP SPECIFICATION

- Flow: up to 17 m^3/h
- Head: up to 99 m
- Connections: Rp threaded for inlet and outlet
- Maximum working pressure: 10 Bar
- Maximum altitude at rated current: 1000 m
- Maximum ambient temperature: 40 °C
- Liquid temperature range: Minimum: from 0 °C according to gasket material
  Maximum: +80 °C for domestic use (uses covered by CEI EN standard 60335-2-41);
- The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

MOTOR SPECIFICATION

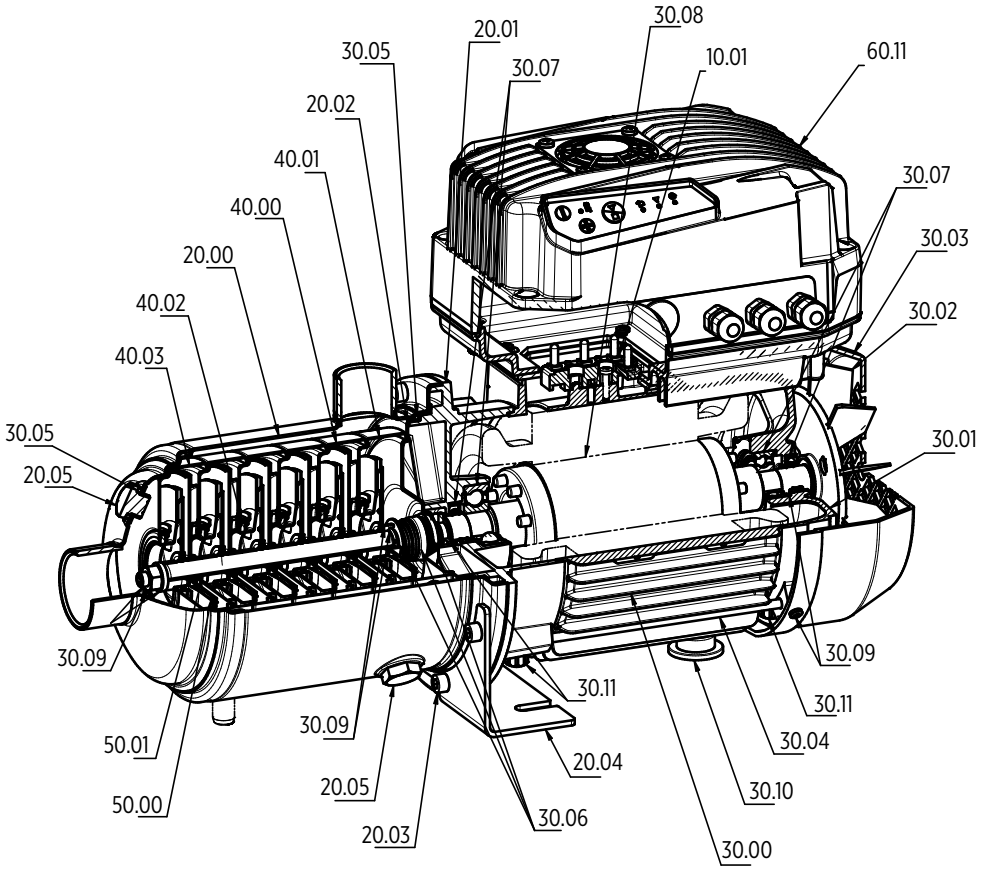
- Three-phase: 220-230 V ± 5 % up to 3 kW.
- Asynchronous, TEFC (Totally Enclosed, Fan-Cooled)
- 2 pole, 60 Hz
- IP55 protection motor, Insulation class F

AVAILABLE ON REQUEST

- Special mechanical seal
- Discharge inlet/outlet NPT
- Inlet connection 1" Rp for EH 3

MATERIALS/FLUIDS COMPATIBILITY

Pos.	Parts description	Type	I version		N version	
			ASTM/AISI	DIN/EN	ASTM/AISI	DIN/EN
20.00	**Pump casing**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
20.02	**Seal housing disc**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
20.05	**Filing and drain plug**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
30.08	**Rotor and Pump shaft**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
30.01	**Mechanical seal**	EH 3-5-9	Carbon / Ceramic / EPDM			
30.05	**O-Ring**	EPDM	-	-	-	-
30.09	**Screws, nuts and washers**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
40.00	**Stage housing and diffuser**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
40.02	**Floating neck ring assembly**	Stainless steel and PPS	AISI 304	-	-	-
40.03	**Initial stage housing**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
40.01	**Last stage with holes**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
50.00	**Impeller**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
50.01	**Impeller spacers**	Stainless steel	AISI 304	1.4301	AISI 316	1.4401
	Pressure trasducer	Stainless steel	AISI 304	1.4301	AISI 316	1.4401



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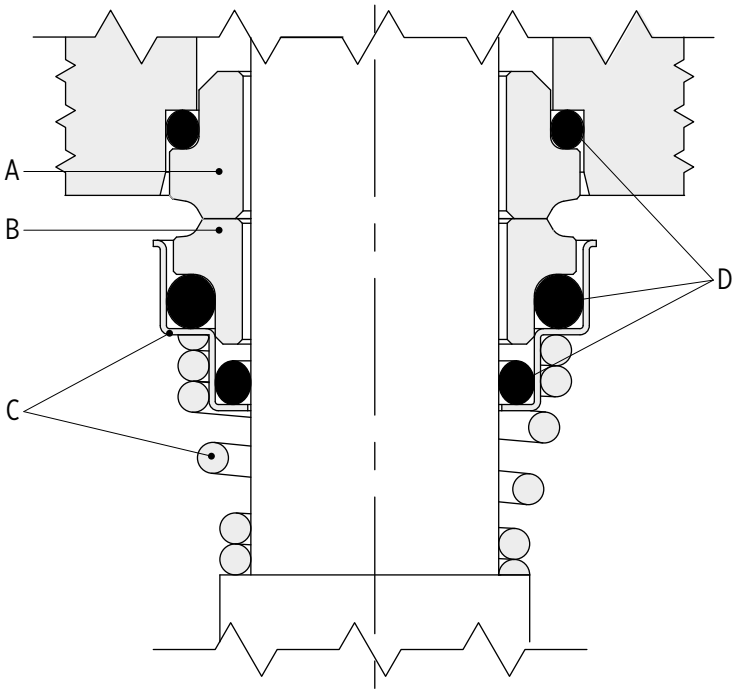
MECHANICAL SEAL SPECIFICATIONS



STANDARD VERSION

Model	Type				Position				Temperature [°C]
					A Stationary part	B Rotating part	C Other components	D Elastomers	
EH 3 - 5 - 9									
E0	V	B	G	E	Ceramic	Graphite	AISI 316	EPDM	-15°C +110°C

AVAILABLE ON REQUEST

Model	Type				Position				Temperature [°C]
					A Stationary part	B Rotating part	C Other components	D Elastomers	
E2	Q	Q	G	E	Silicon Carbide	Silicon Carbide	AISI 316	EPDM	-15°C +110°C
V3*	Q	Q	G	V	Silicon Carbide	Silicon Carbide	AISI 316	FKM	-10°C +110°C
V8*	Q	U	G	V	Silicon Carbide	Tungsten Cabide	AISI 316	FKM	-10°C +110°C

* on request version with stopper pin

Type	Material
B	Carbon graphite
E	EPDM
G	AISI 316
Q	Silicon carbide
V	FKM
V	Ceramic alumina
U	Tungsten carbide

E-Tech

THREE-PHASE MOTORS SPECIFICATIONS

- Asynchronous, TEFC (Totally Enclosed, Fan-Cooled)
- 2 pole, 60 Hz
- IP55
- Insulation class F
- IE3 Motors Efficiency according to IEC 60034-30-1:2014
- Electrical performance according to IEC 60034-2-1:2007
- Standard voltage: 220-230 V ± 5 % up to 3 kW

P_N [kW]	Rendimento / Efficiency η_N %			
	Δ 230 V Y 400 V			IE
	4/4	3/4	2/4	
0.75	82.5	82.6	80.4	3
1.1	84	84.5	82.8	
1.5	85.5	85.7	83.7	
2.2	86.9	87.6	86.8	

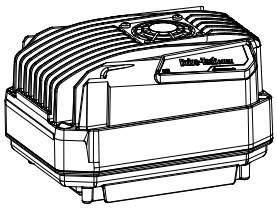
P_N [kW]	MOTOR SIZE	N. of poles	f_N [Hz]	230 V 60 Hz				
				cos φ	I_S / I_N	T_N [Nm]	T_S / T_N	T_M / T_N
0.75	71	2	60	0.85	7.9	2.1	3.9	4
1.1	71			0.85	6.6	3.1	3	3.1
1.5	80			0.85	8.2	4.1	3.1	3.2
2.2	90			0.89	9.8	6.0	4	4.1

P_N [kW]	VOLTAGE U_N		n_N [min^{-1}]	Motor operating conditions		
	Δ 230 V	Y 400 V		Altitude Above Sea Level [m]	T. amb min/max [°C]	ATEX
	I_N [A]					
0.75	2.8	1.6	3440	≤ 1000	-15 / 40	NO
1.1	4.0	2.3	3440			
1.5	5.4	3.1	3480			
2.2	7.5	4.3	3490			

DRIVE-TECH MINI

APPLICATIONS

- Water booster sets
- HVAC systems with circulating pumps
- Control of submersible pumps (when installed on wall)



FEATURES

- Energy saving due to variable speed control
- Soft start and soft stop
- Extended system life and reliability
- Simplified installation on motor or wall
- Easy and fast commissioning thanks to initial configuration wizard
- Installation on humid and dusty environment made possible by IP55 (NEMA 4) protection degree
- High thermal and mechanical performance thanks to aluminum case and independent ventilation

SPECIFICATIONS

Advanced functionalities:

- Monitoring and programming with smartphone and FE Connect App, available for Android and iOS mobile devices
- Remote control using a smartphone nearby as a modem
- Copy and paste of programming recipes
- Ability to send reports via email
- Multilingual support

Control modes:

- Constant pressure control
- Constant or proportional differential pressure control
- Constant temperature control
- Constant differential temperature control
- Constant flow control
- External frequency control (trimmer) or 1 or 2 preset frequencies control

Built-in protection against:

- Overvoltage and undervoltage
- Overcurrent and no load
- Dry running
- Overtemperature

EMC compatibility for residential environment:

- Integrated PFC (P.F. 1) to meet EN61000-3-2
- Integrated input filter for Category C1 (EN61800-3), Class B (EN55011)

Multi-pump operation (COMBO):

- Up to 8 units
- Working alternation for uniform pumps wearing
- Master or slave replacement in case of failure to ensure continuity of operation

Advanced motor controls:

- Next generation control of asynchronous motors
- Sensorless control of permanent magnet synchronous motors

Inputs and outputs:

- 2 programmable digital inputs for motor start & stop
- Modbus RTU
- 2 output relays for alarm and run indication
- 2 analog inputs 4-20 mA
- 2 analog inputs 0-10 V

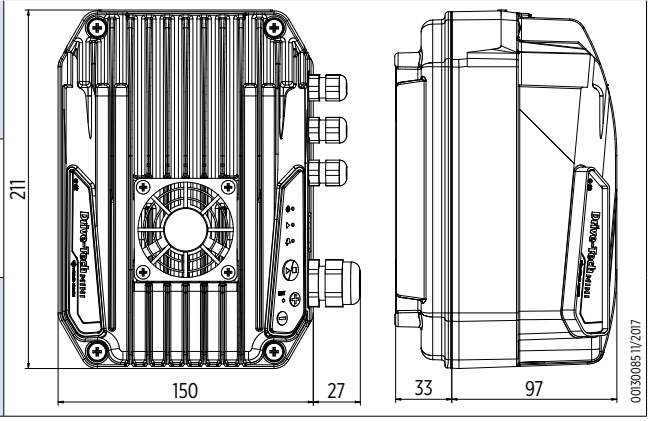
SYSTEM PERFORMANCE

- P.F. line side: 1
- Power frequency: 50-60 Hz (± 2%)
- Stocking temperature: from -30 °C to +70 °C
- Minimum ambient temperature at rated current: -10 °C
- Maximum ambient temperature at rated current: +40 °C
- Maximum altitude at rated current: 1000 m
- Maximum relative humidity: 95% without condensation
- Grade of protection: IP55 (NEMA 4) or motor IP when connected to motor terminal box (protect the device from exposure to sunlight and atmospheric agents)
- Connetivity: serial RS 485 for COMBO operation (up to 8 units) + Bluetooth SMART for motoring programming + MODBUS RTU

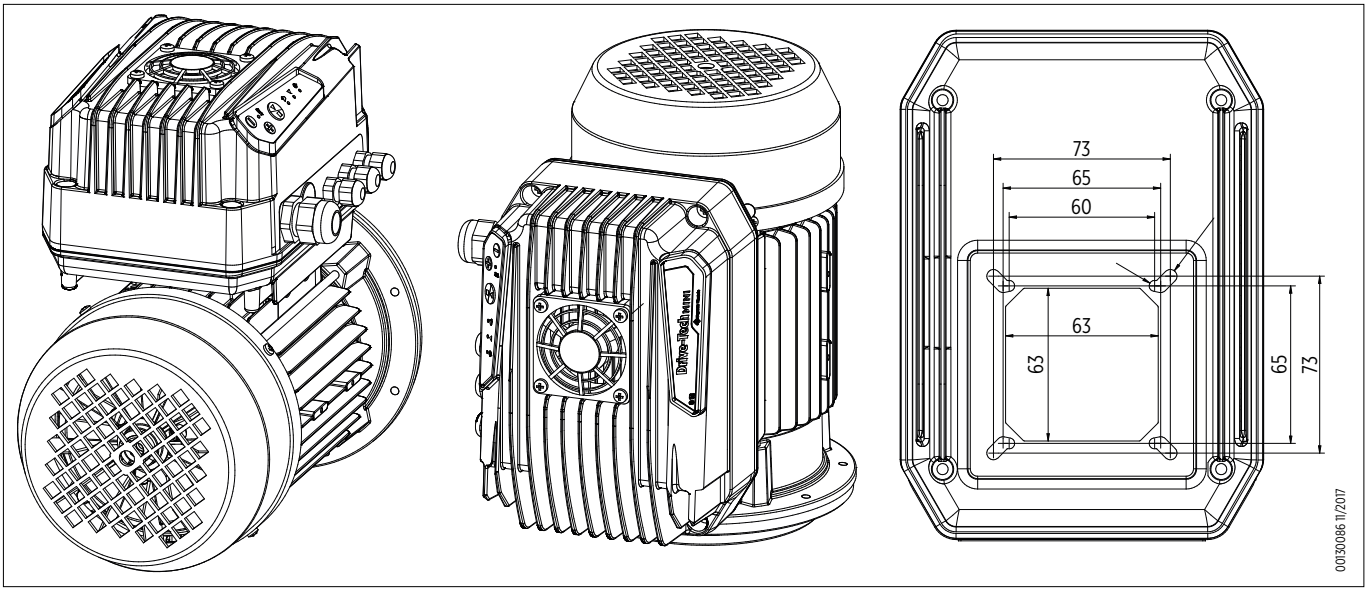
TRASDUCER SPECIFICATION

- Nominal output signal (protected against shortcut): 4 ÷ 20 mA
- Power voltage [U_B], protection antipolarity: 9 ÷ 28 V
- Sensor temperature range: 0 °C ÷ +80 °C
- Environment temperature range (based on electric connection): -20 °C ÷ +80 °C
- Shielded cable: 2 m
- Protection degree achived with connector coupled: IP67

DIMENSIONAL DATA

Model	Vin [Vac]	Max Vout [V]	Max I input [A]	Max I out [A]	Typical motor power P_2 [kW]	Drawing
DTm 2.005 M/T 3 A	1 x 230 ± 15 %	3 x 230	4.5	3	0.55	
DTm 2.011 M/T 5 A	1 x 230 ± 15 %	3 x 230	7.5	5	1.1	
DTm 2.015 M/T 7.5 A	1 x 230 ± 15 %	3 x 230	11	7.5	1.5	

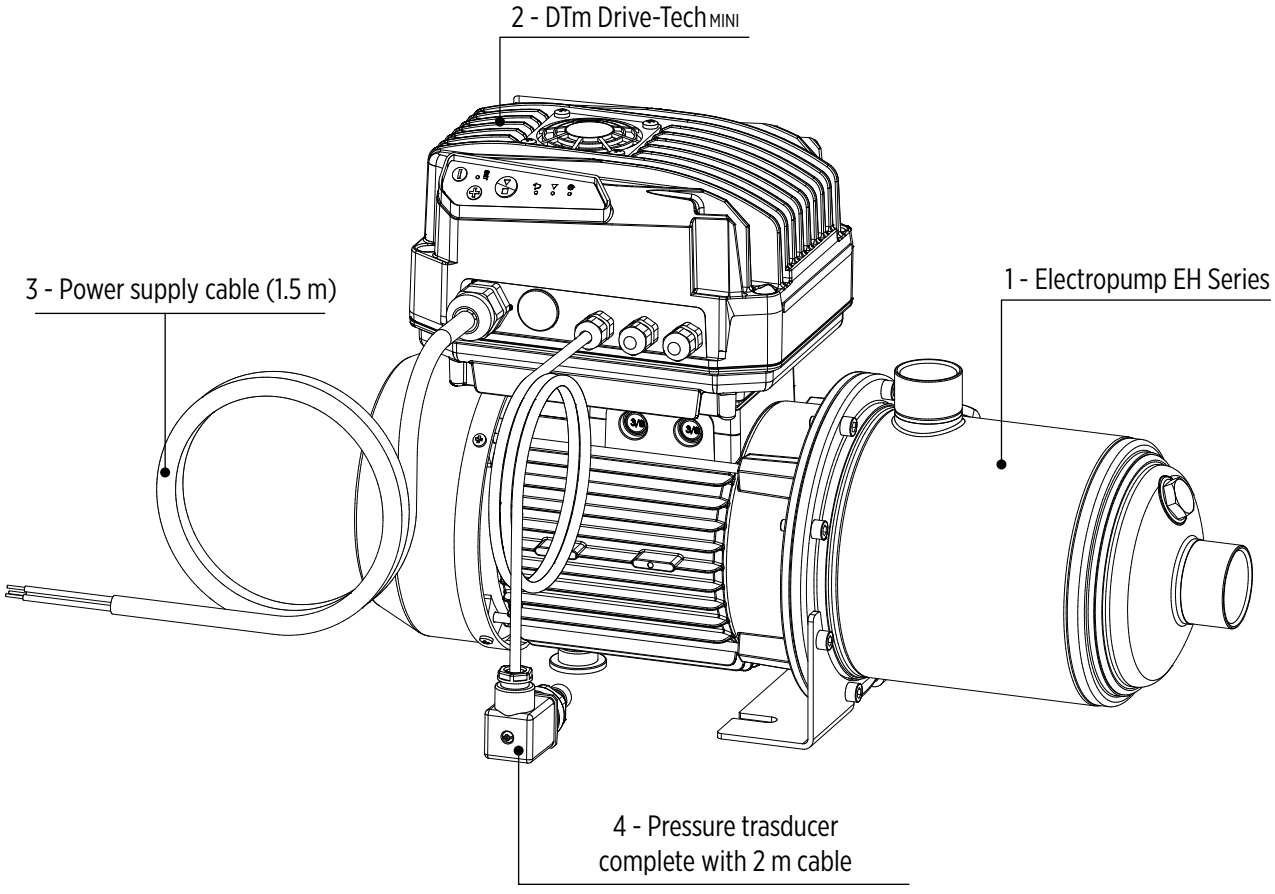
INSTALLATION DRAWINGS



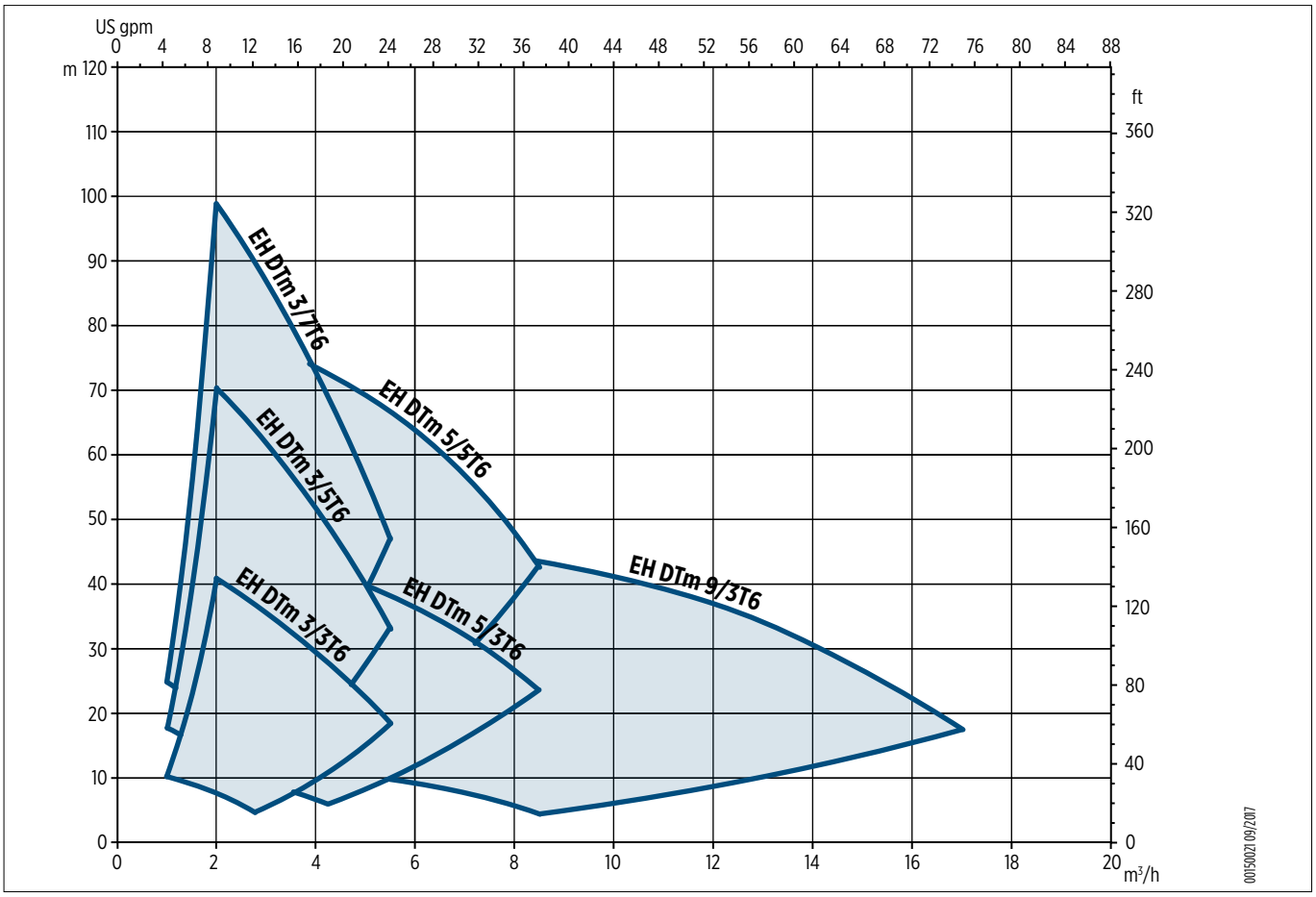
DTm can be installed directly on motor terminal box of horizontal or vertical axis pumps

EH DTm 3-5-9

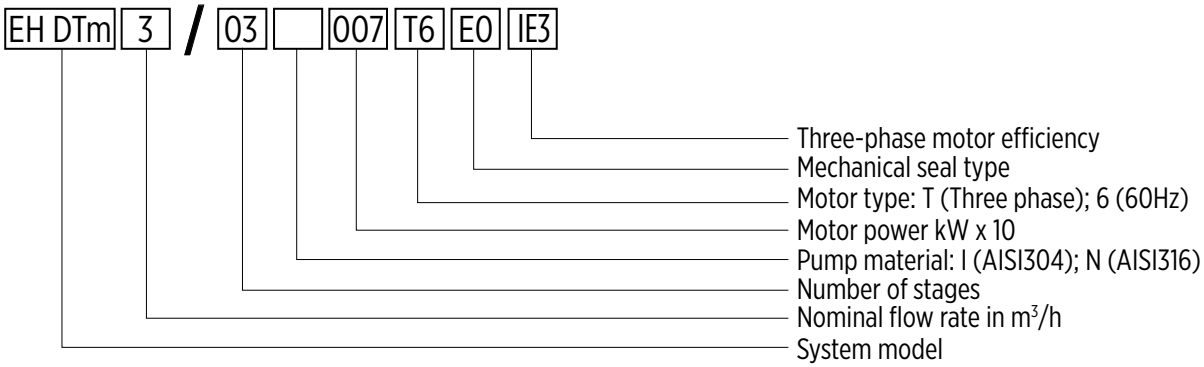
PACKAGE SYSTEM AND MAIN COMPONENTS INCLUDED



EH DTm FAMILY CURVES



SYSTEM IDENTIFICATION CODE



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EH DTm 3-5-9

TABLE OF HYDRAULIC PERFORMANCE AT 60Hz

System model	Q = DELIVERY																	
	l/min 0	33	42	50	58	67	75	83	92	100	117	133	141.7	167	200	233	267	283.3
	m^3/h 0	2	2.5	3	3.5	4	4.5	5	5.5	6	7	8	8.5	10	12	14	16	17
	US GMP 0	8.8	11.0	13.2	15.4	17.6	19.8	22.0	24.2	26.4	30.8	35.2	37.5	44.0	52.8	61.6	70.4	74.8
	H = TOTAL M.HEAD OF WATER COLUMN [m]																	
EH DTm 3/3T6	47.5	41.0	38.5	35.5	32.5	29.5	26.0	22.5	18.5									
EH DTm 3/5T6	80.5	70.5	66.0	62.0	57.0	51.5	46.0	40.0	33.0									
EH DTm 3/7T6	113.0	99.0	93.5	87.0	80.5	73.0	65.0	56.5	47.0									
EH DTm 5/3T6	50.5		46.0	45.0	44.0	42.5	41.5	40.0	38.0	36.5	32.0	27.0	23.5					
EH DTm 5/5T6	85.0		79.0	77.0	75.5	73.5	71.5	69.0	66.5	64.0	57.0	48.0	43.0					
EH DTm 9/3T6	52.5									46.5	45.0	44.0	43.5	41.0	37.0	30.5	22.5	17.5

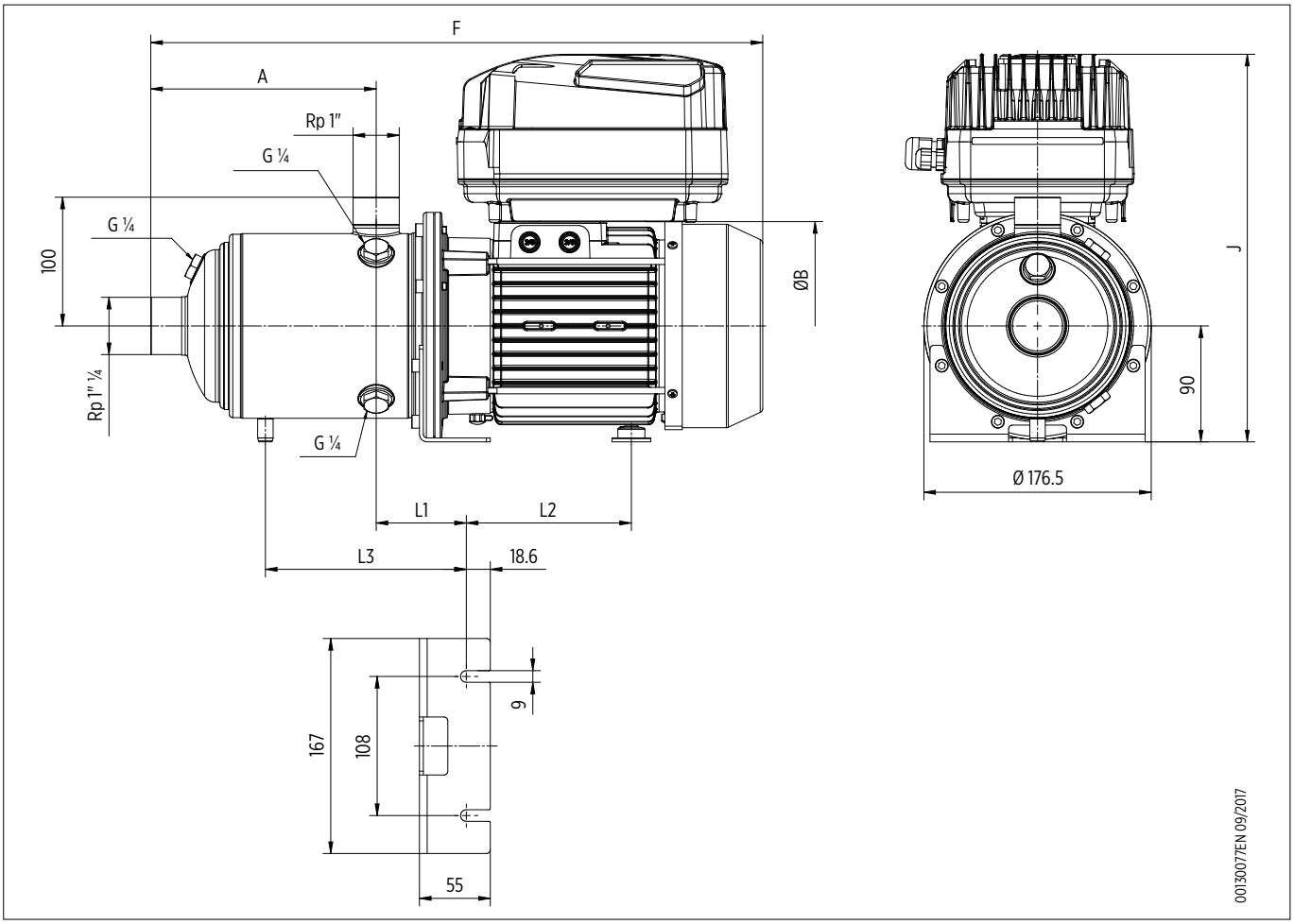
EH DTm
EH Series with Drive-Tech MINI
Technical data and Performance curves

EH DTm 3

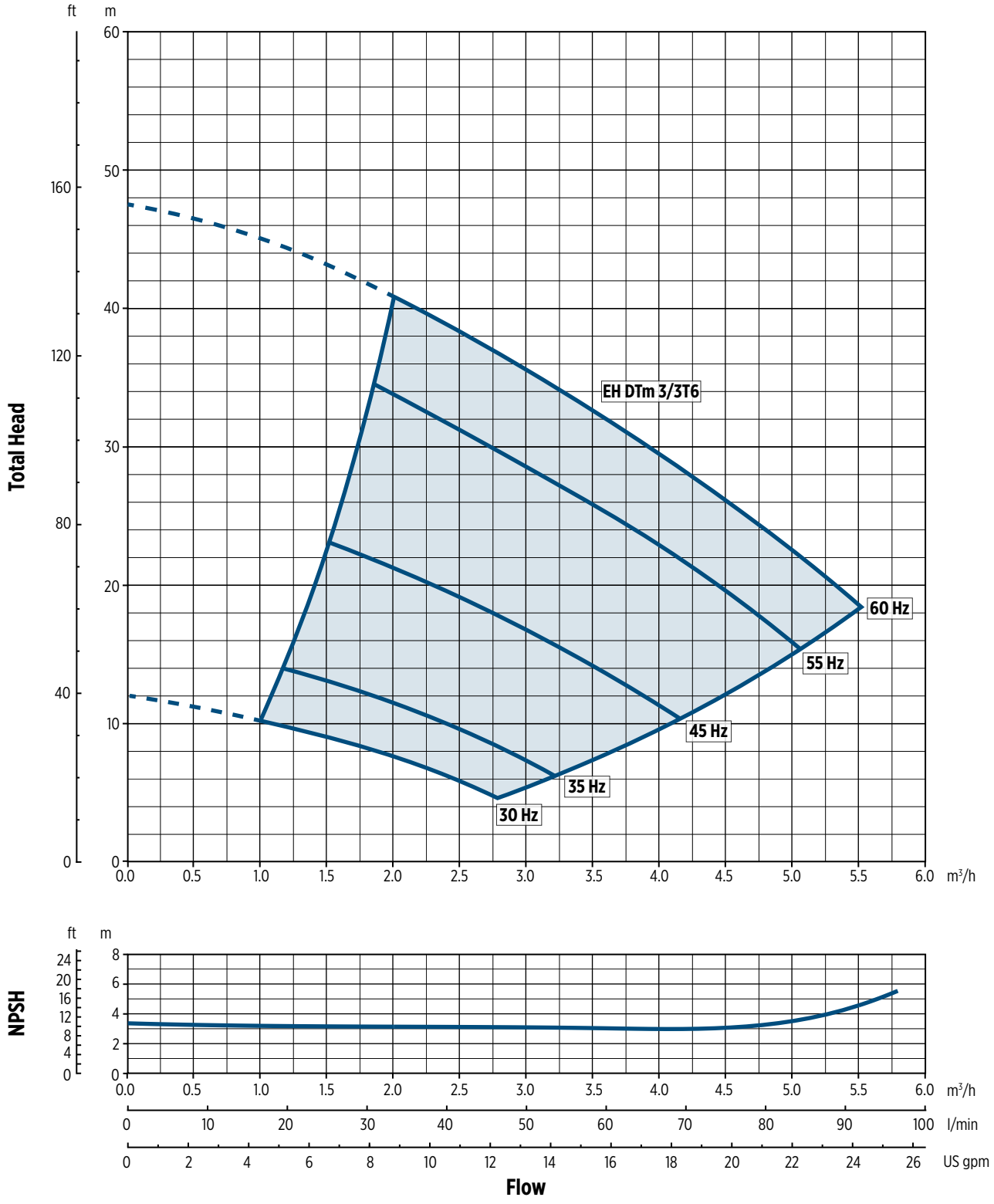
TECHNICAL DATA

System model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]	Dimensions [mm]							Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	A	F	ØB	J	L1	L2	L3	
EH DTm 3/3T6	71	0.75	1	1.05	4.5	103	363	144	294	70	101	-	13.4
EH DTm 3/5T6	80	1.5	2	1.78	7.5	151	448	162	301	70	128	-	18.4
EH DTm 3/7T6	90	2.2	2.7	2.47	11.0	199	543	179	308	70	172	180	24.8

DIMENSIONAL DRAWINGS



PERFORMANCE CURVES



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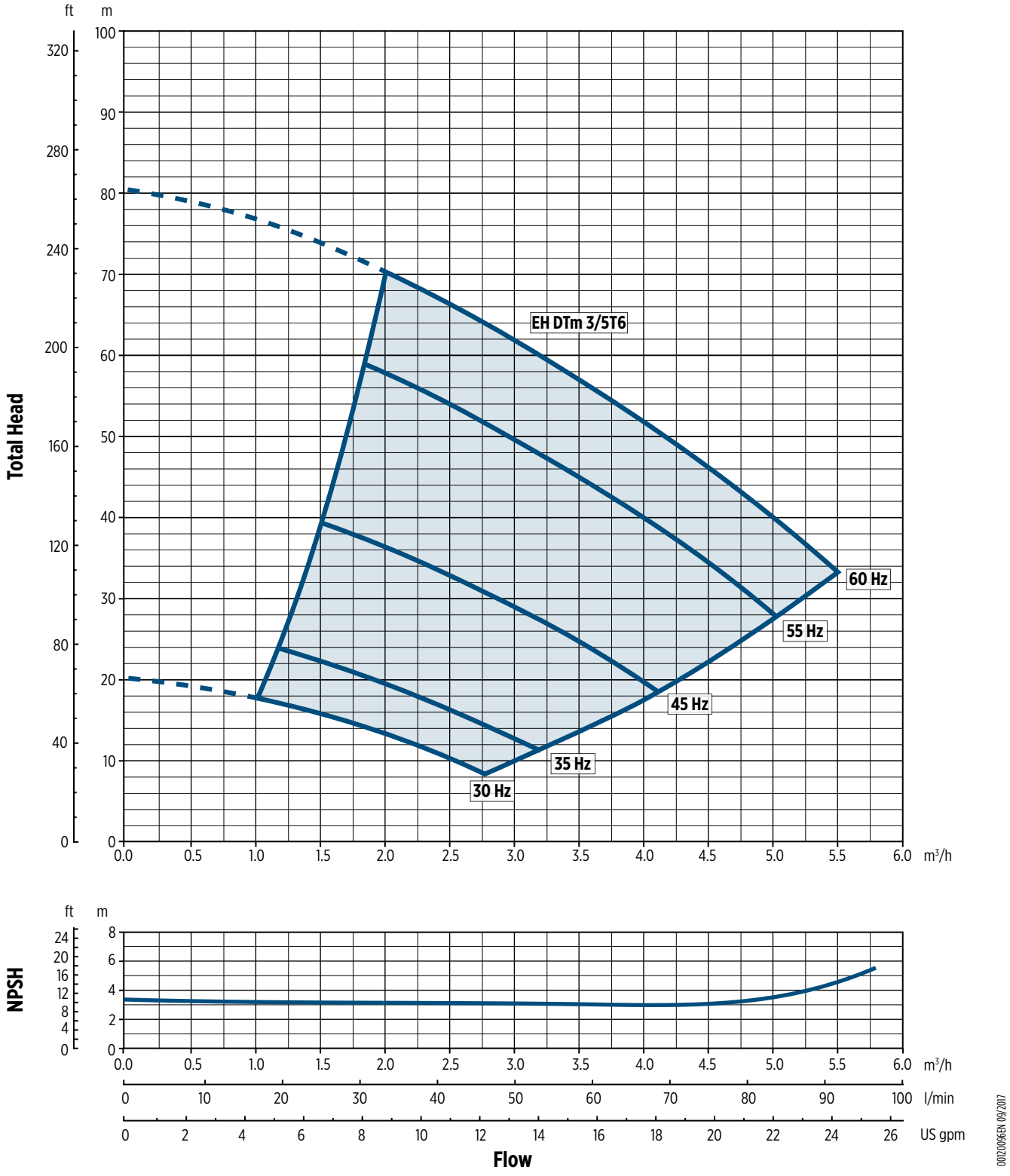
The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

PERFORMANCE CURVES



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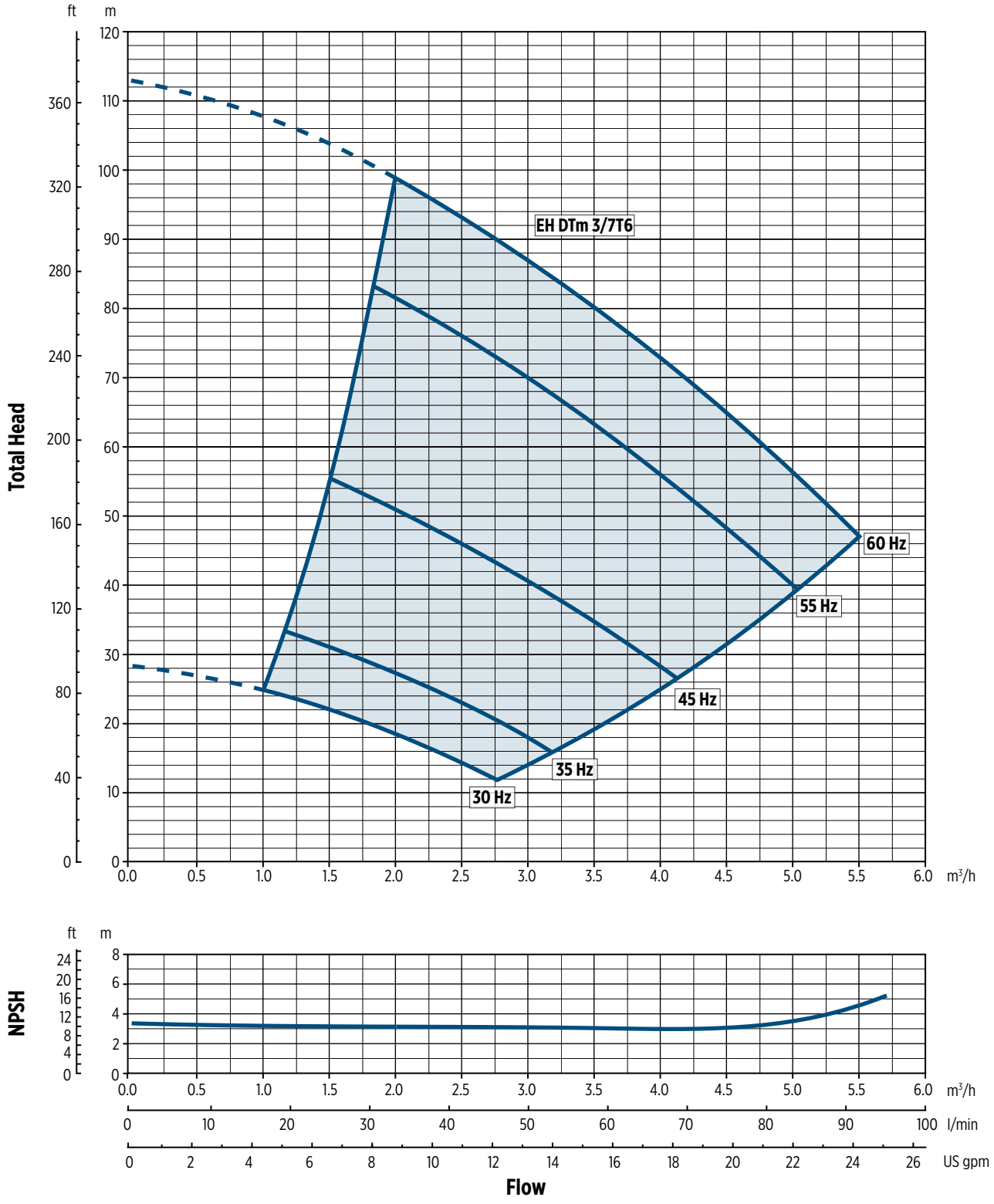
PERFORMANCE CURVES



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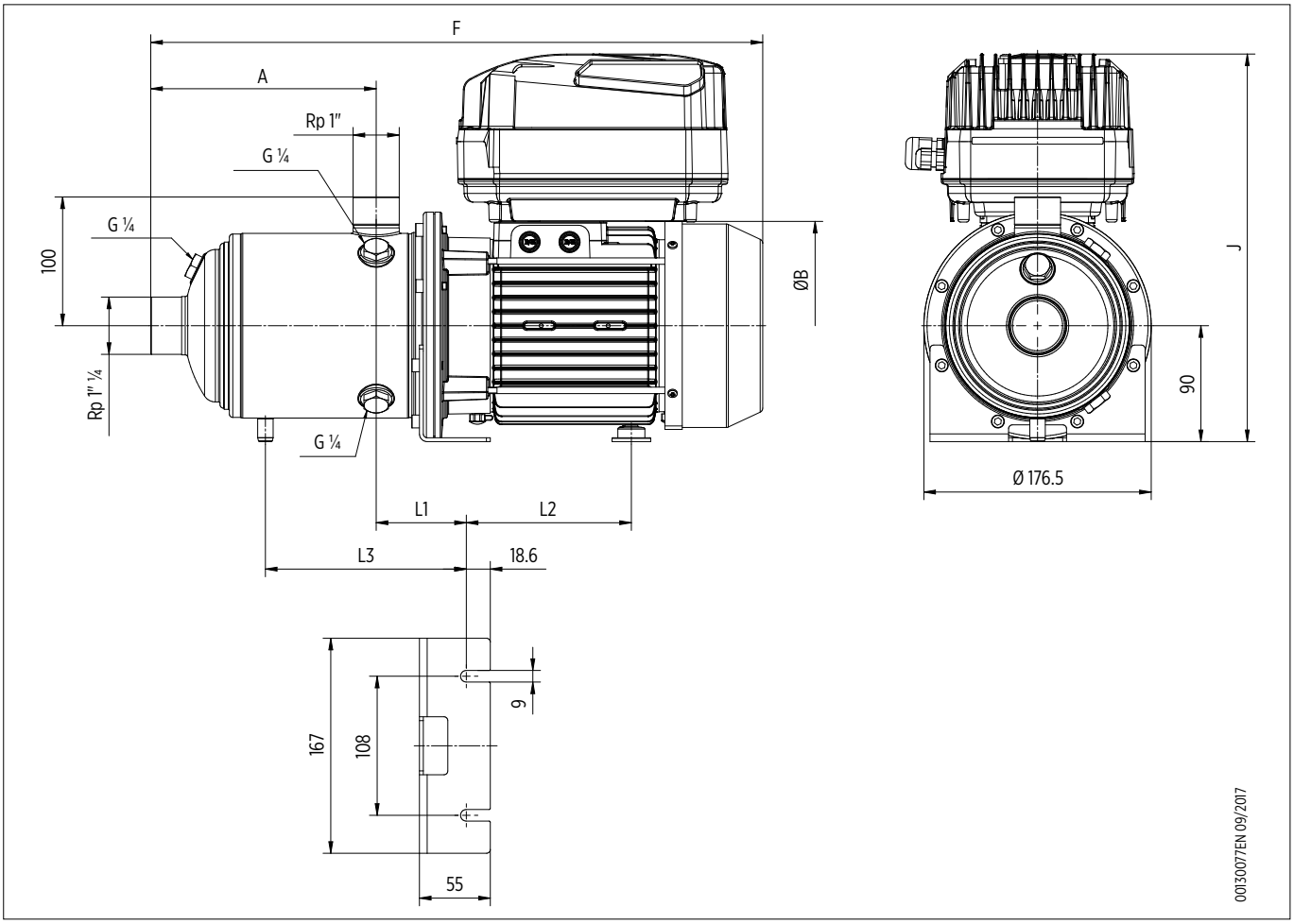
EH DTm 5

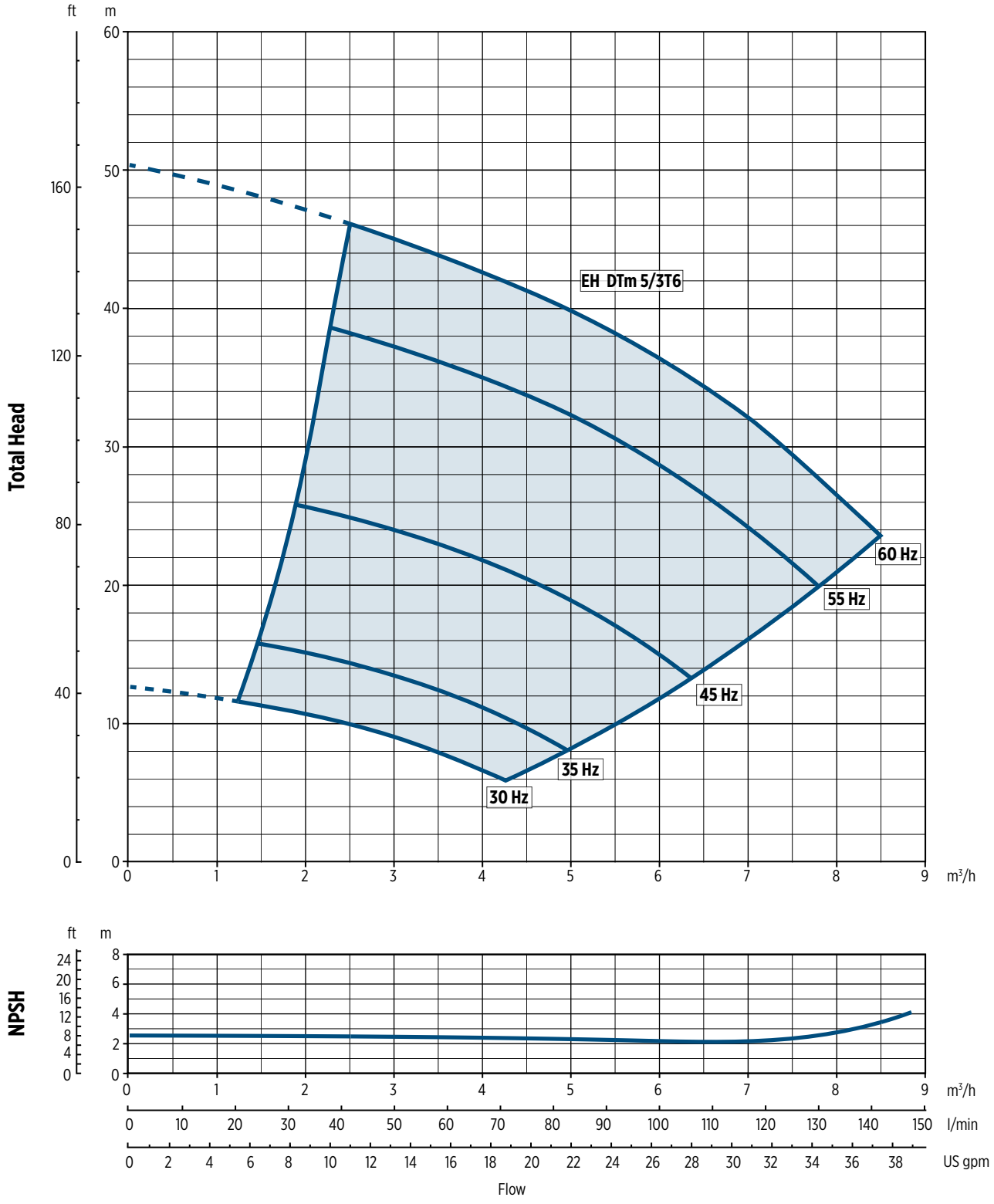
TECHNICAL DATA

System model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]	Dimensions [mm]							Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	A	F	ØB	J	L1	L2	L3	
EH DTm 5/3T6	71	1.1	1.5	1.45	7.5	103	363	144	294	70	101	-	14
EH DTm 5/5T6	90	2.2	2.7	2.46	11	151	495	179	308	70	172	-	23.6

DIMENSIONAL DRAWINGS



PERFORMANCE CURVES



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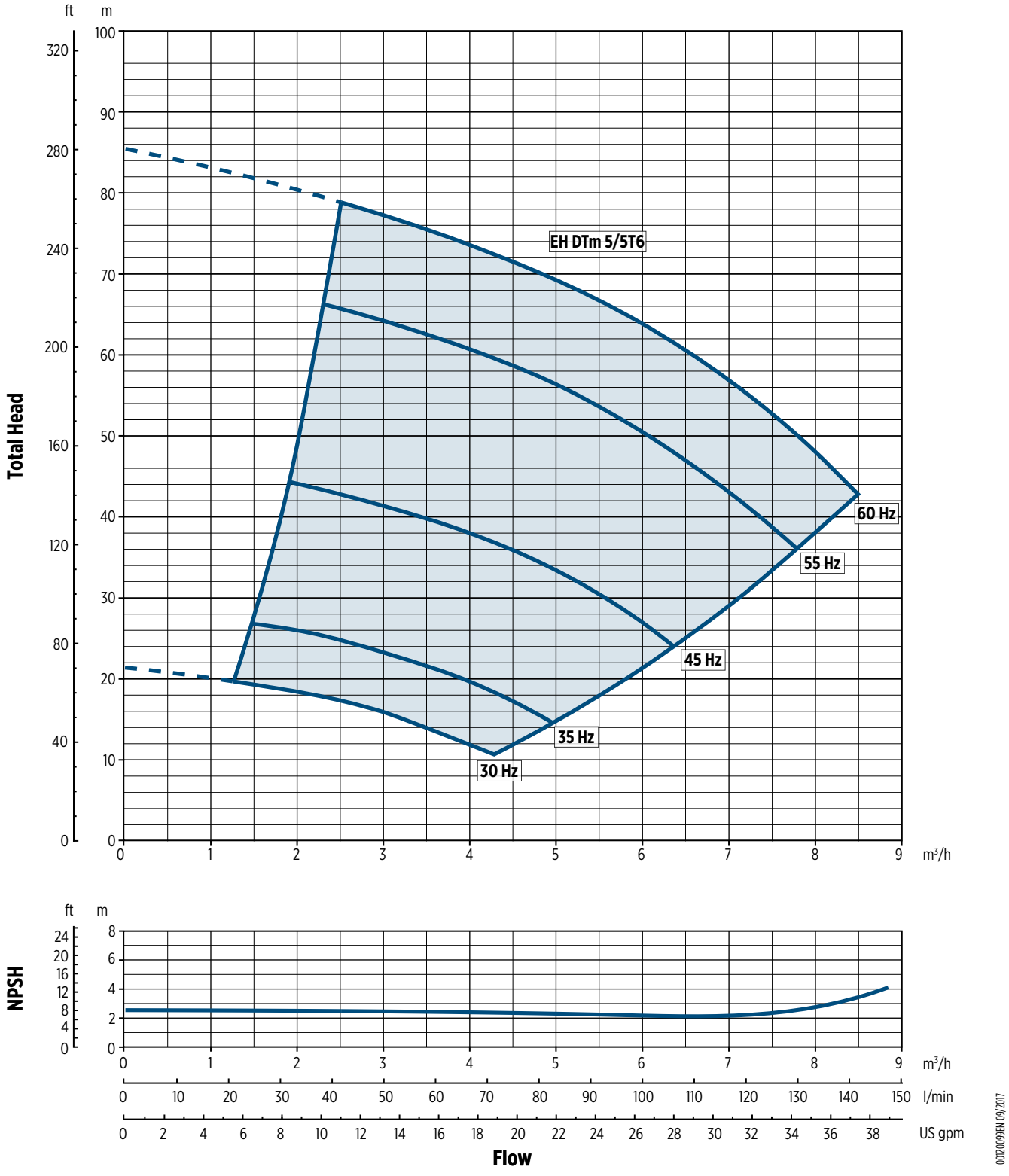
The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

PERFORMANCE CURVES



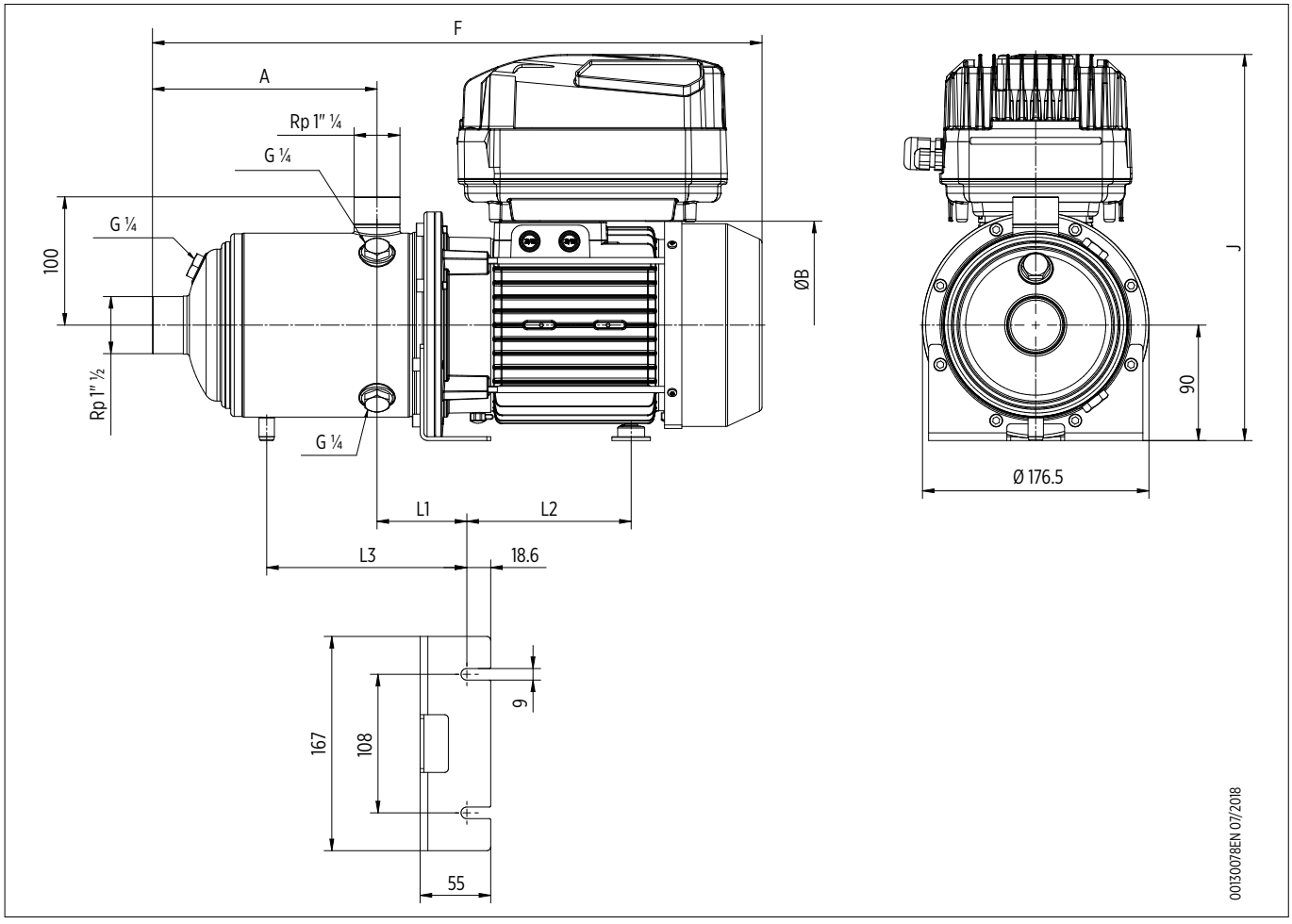
The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

EH DTm 9

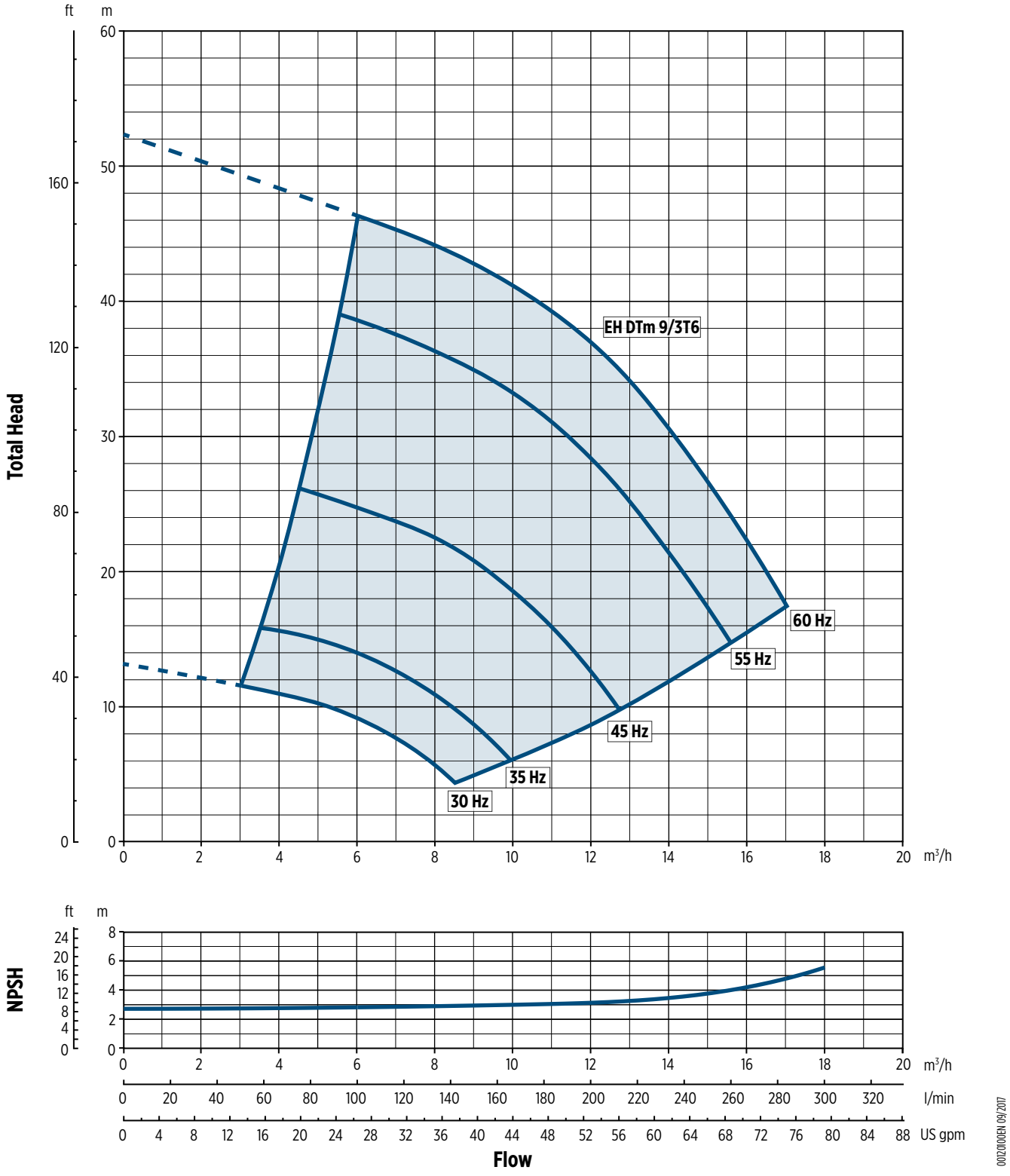
TECHNICAL DATA

System model	Motor Size	MOTOR NOMINAL POWER		INPUT POWER	INPUT CURRENT [A]	Dimensions [mm]							Weight [Kg]
		[kW]	[HP]	[kW]	220-230 V	A	F	ØB	J	L1	L2	L3	
EH DTm 9/3T6	90	2.2	2.7	2.54	11.0	118	466	179	308	74	172	-	22.8

DIMENSIONAL DRAWINGS



PERFORMANCE CURVES



The hydraulic characteristics are guaranteed, according to ISO standard 9906:2012, grade 3B

REVISION CHANGE NOTICE

Rev. No.	Changes	Page
01	Modification of Technical drawing of EH DTm 9	21

NOTES

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