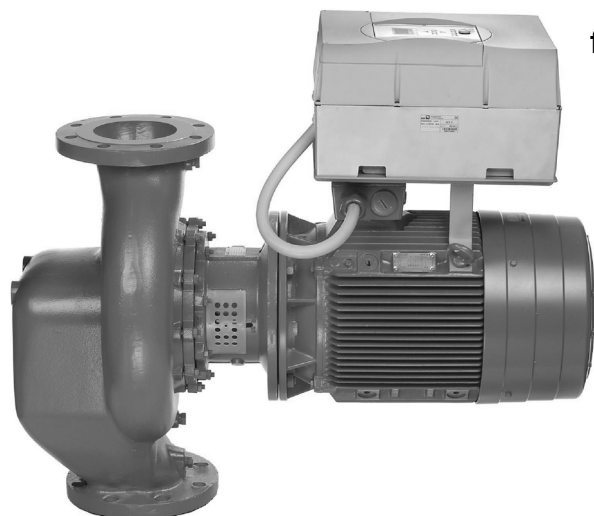


In-line Pumps with Standardized Three-Phase Motor and Motor-mounted Frequency Inverter for Continuously Variable Speed Adjustment



Fields of Application

- Heating systems
- Air-conditioning systems
- Service water supply systems
- Water supply systems
- Industrial recirculation systems

Fluid Handled

Liquids not chemically or mechanically aggressive to the pump materials.

Operating Data

Q up to 788 m³/h, 219 l/s
H up to 100 m
t -10 °C to +110 °C
p_d up to 16 bar¹⁾

¹⁾ The sum of inlet pressure and shutoff head must not exceed the value indicated.

Designation

Etaline G N 65 - 160 / 75 2 PDA X

Pump type series _____
Material combination _____
N = stub shaft variant with standardized motor
Pump size _____
Nom. dia. of suction/discharge nozzle _____
Approx. impeller diameter _____
Motor rating x 10 (example: 7.5 kW) _____
Number of poles _____
Advanced/Basic _____
X = differential pressure transmitter _____

Design

Close-coupled in-line pump with variable speed standardized motor. The pump shaft is rigidly connected to the motor shaft.

Bearings

Grease-lubricated deep-groove ball bearings.

Shaft Seal

Maintenance-free, uncooled mechanical seal to EN 12 756.

Materials

	Etaline PumpDrive GN	Etaline PumpDrive MN
Volute casing	Cast iron JL1040 ²⁾	Cast iron JL1040 ²⁾
Discharge cover	Cast iron JL1040 ²⁾	Cast iron JL1040 ²⁾
Impeller	Cast iron JL1040 ²⁾	Tin bronze
Casing wear rings	Cast iron JL1040 ²⁾	Bronze
Shaft	Tempered steel C 45	Tempered steel
Shaft sleeve	Chrome nickel	Chrome nickel
	molybdenum steel 1.4571	molybdenum steel 1.4571
Drive lantern	Cast iron JL1040 ²⁾	Cast iron JL1040 ²⁾

²⁾ to EN 1561 GJL-250 (was GG-25)

Drive

Surface-cooled standardized three-phase motor with motor-mounted frequency inverter and interference suppression filter to DIN EN 55 011, Class B ≤7.5 kW, Class A ≥11 kW.

Product standard IEC 22G-WG4.

Continuously variable speed adjustment via potentiometer, standard signal or on the basis of a set value using a sensor and PI controller.

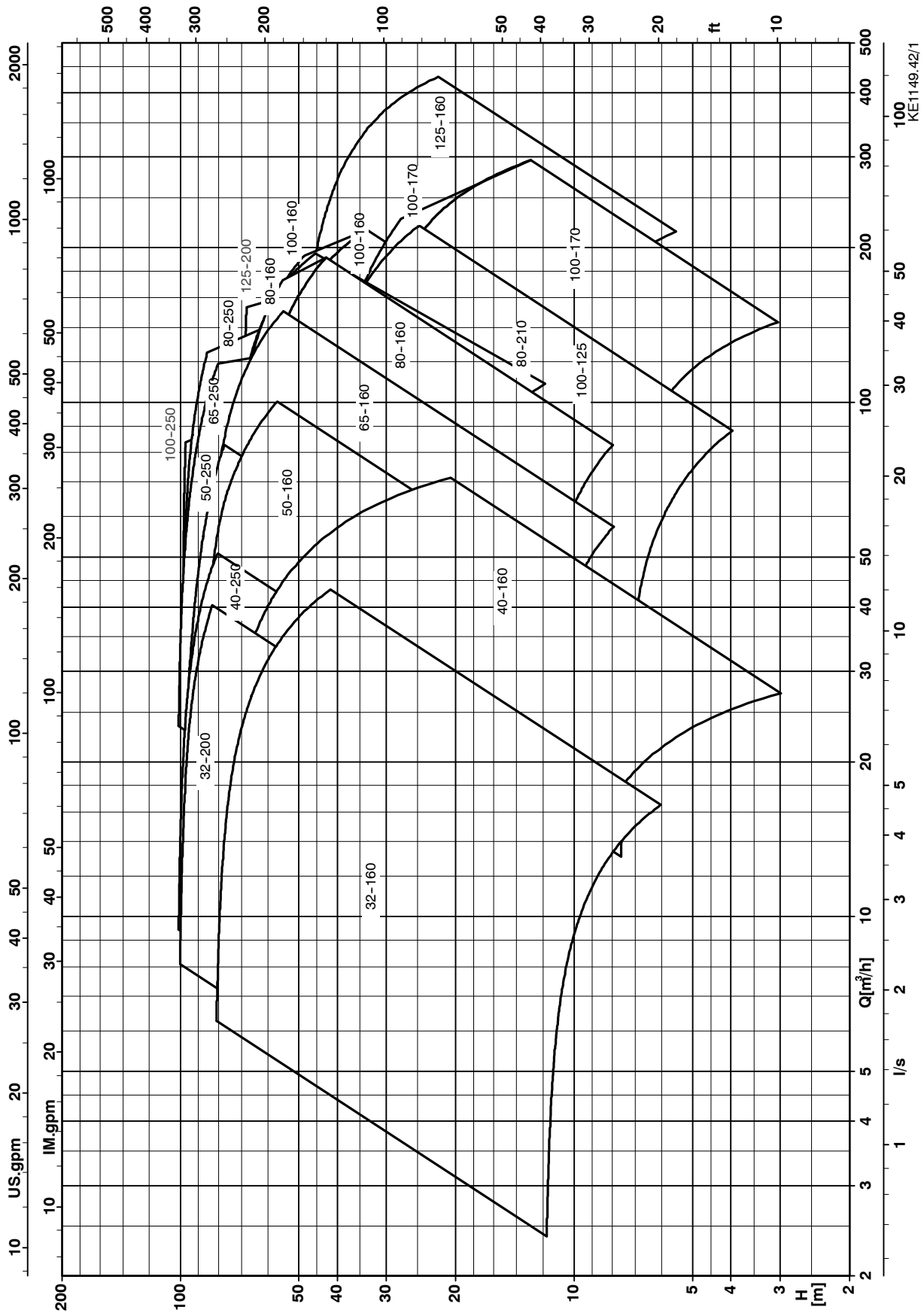
Mains voltage:	3-380 V AC -10 % to 480 V AC +10 %
Mains frequency:	50/60 Hz
Power factor:	cos φ ≥0.9
Mode of operation:	continuous operation S1 and intermittent operation S3 ³⁾
Permanent overload:	nominal load + 10 %
Type of enclosure:	IP 55
Thermal class:	F / B
Design	up to 4 kW: V1 from 5.5 kW: V1 / V15

³⁾ In a humid environment, condensation on the Hya-Drive during intermittent operation must be prevented.

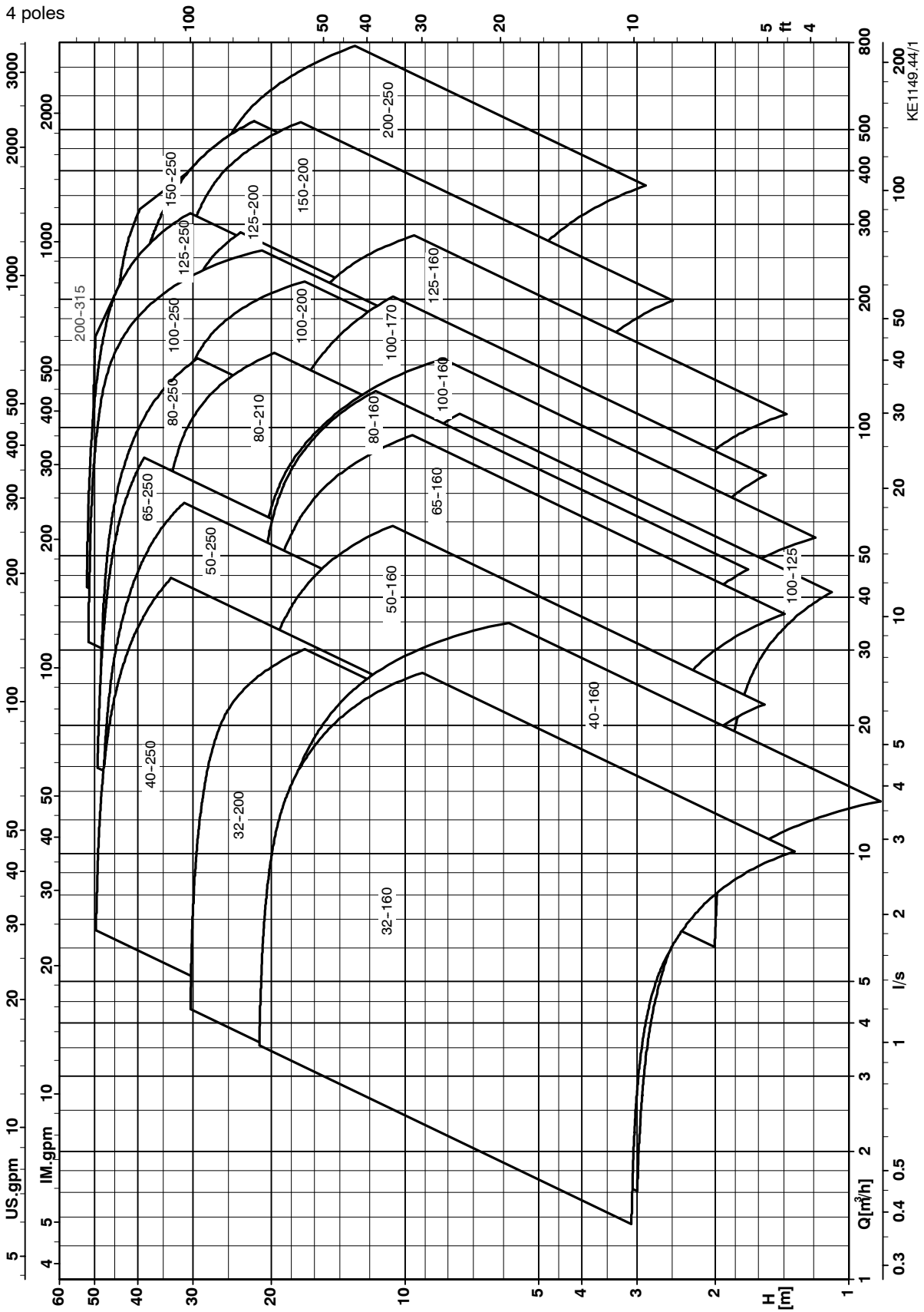
⚠️ Pulsed current sensitive earth leakage circuit breakers must not be used as sole protective devices against indirect contact for PumpDrive, as the direct-current component in the earth leakage current may prevent the circuit breaker from tripping the unit (VDE DIN 010). Universal a.c./d.c. sensitive circuit breakers can be used, however.

Selection Charts

2 poles



For individual characteristic curves see Characteristic Curve Booklet 1149.55



For individual characteristic curves see Characteristic Curve Booklet 1149.55

2-pole Models ¹⁾

Etaline PumpDrive	Motor			Weight ~ kg
	Size 2-pole	P ₂ ²⁾ kW	400 V ~ A	
32-160/302 PD	100L	3,0	8,0	60
32-160/402 PD	112M	4,0	10,0	74
32-160/552 PD	132S	5,5	13,0	85
32-160/752 PD	132S	7,5	16,5	98
32-160/1102 PD	160M	11,0	25,0	134
32-200/552 PD	132S	5,5	13,0	93
32-200/752 PD	132S	7,5	16,5	106
32-200/1102 PD	160M	11,0	25,0	142
32-200/1502 PD	160M	15,0	31,0	151
32-200/1852 PD	160L	18,5	39,0	178
40-160/402 PD	112M	4,0	10,0	75
40-160/552 PD	132S	5,5	13,0	87
40-160/752 PD	132S	7,5	16,5	100
40-160/1102 PD	160M	11,0	25,0	135
40-160/1502 PD	160M	15,0	31,0	144
40-250/1102 PD	160M	11,0	25,0	151
40-250/1502 PD	160M	15,0	31,0	160
40-250/1852 PD	160L	18,5	39,0	187
40-250/2202 PD	180M	22,0	45,0	215
50-160/552 PD	132S	5,5	13,0	89
50-160/752 PD	132S	7,5	16,5	102
50-160/1102 PD	160M	11,0	25,0	138
50-160/1502 PD	160M	15,0	31,0	147
50-160/1852 PD	160L	18,5	39,0	174
50-160/2202 PD	180M	22,0	45,0	202
50-160/3002 PD	200L	30,0	65,0	281
50-250/1502 PD	160M	15,0	31,0	163
50-250/1852 PD	160L	18,5	39,0	190
50-250/2202 PD	180M	22,0	45,0	219
50-250/3002 PD	200L	30,0	65,0	298
65-160/752 PD	132S	7,5	16,5	104
65-160/1102 PD	160M	11,0	25,0	140
65-160/1502 PD	160M	15,0	31,0	149
65-160/1852 PD	160L	18,5	39,0	176
65-160/2202 PD	180M	22,0	45,0	205
65-160/3002 PD	200L	30,0	65,0	284
65-160/3702 PD	200L	37,0	80,0	313
65-250/1852 PD	160L	18,5	39,0	195
65-250/2202 PD	180M	22,0	45,0	223
65-250/3002 PD	200L	30,0	65,0	302
65-250/3702 PD	200L	37,0	80,0	331
80-160/752 PD	132S	7,5	16,5	110
80-160/1102 PD	160M	11,0	25,0	146
80-160/1502 PD	160M	15,0	31,0	155
80-160/1852 PD	160L	18,5	39,0	182
80-160/2202 PD	180M	22,0	45,0	211
80-160/3002 PD	200L	30,0	65,0	290
80-160/3702 PD	200L	37,0	80,0	319
80-210/1852 PD	160L	18,5	39,0	194
80-210/2202 PD	180M	22,0	45,0	222
80-210/3002 PD	200L	30,0	65,0	302
80-210/3702 PD	200L	37,0	80,0	331
80-250/3002 PD	200L	30,0	65,0	313
80-250/3702 PD	200L	37,0	80,0	342
80-250/4502 PD	225M	45,0	93,0	465

Etaline PumpDrive	Motor			Weight ~ kg
	Size 2-pole	P ₂ ²⁾ kW	400 V ~ A	
100-125/552 PD	132S	5,5	13,0	105
100-125/752 PD	132S	7,5	16,5	118
100-125/1102 PD	160M	11,0	25,0	154
100-125/1502 PD	160M	15,0	31,0	163
100-125/1852 PD	160L	18,5	39,0	190
100-125/2202 PD	180M	22,0	45,0	219
100-160/752 PD	132S	7,5	16,5	116
100-160/1102 PD	160M	11,0	25,0	152
100-160/1502 PD	160M	15,0	31,0	161
100-160/1852 PD	160L	18,5	39,0	188
100-160/2202 PD	180M	22,0	45,0	216
100-160/3002 PD	200L	30,0	65,0	296
100-160/3702 PD	200L	37,0	80,0	325
100-170/1502 PD	160M	15,0	31,0	172
100-170/1852 PD	160L	18,5	39,0	199
100-170/2202 PD	180M	22,0	45,0	228
100-170/3002 PD	200L	30,0	65,0	307
100-170/3702 PD	200L	37,0	80,0	336
100-200/3002 PD	200L	30,0	65,0	342
100-200/3702 PD	200L	37,0	80,0	371
100-200/4502 PD	225M	45,0	93,0	495
100-250/4502 PD	225M	45,0	93,0	498
125-160/2202 PD	180M	22,0	45,0	293
125-160/3002 PD	200L	30,0	65,0	373
125-160/3702 PD	200L	37,0	80,0	402
125-160/4502 PD	225M	45,0	93,0	526
125-200/3702 PD	200L	37,0	80,0	399
125-200/4502 PD	225M	45,0	93,0	522

¹⁾ Rated speed = 3000 rpm

²⁾ Line choke included in scope of supply from motor rating P₂ ≤ 45 kW

4-pole Models ¹⁾

Etaline PumpDrive	Motor			Weight ~ kg
	Size 4-pole	P ₂ kW	400 V ~ A	
32-160/054 PD	80	0.55	1.8	41
32-160/074 PD	80	0.75	2.5	42
32-160/114 PD	90S	1.1	3.5	48
32-160/154 PD	90L	1.5	4.8	51
32-160/224 PD	100L	2.2	6.0	61
32-200/114 PD	90S	1.1	3.5	55
32-200/154 PD	90L	1.5	4.8	58
32-200/224 PD	100L	2.2	6.0	69
32-200/304 PD	100L	3.0	8.0	74
32-200/404 PD	112M	4.0	10.0	84
40-160/054 PD	80	0.55	1.8	42
40-160/074 PD	80	0.75	2.5	43
40-160/114 PD	90S	1.1	3.5	49
40-160/154 PD	90L	1.5	4.8	52
40-160/224 PD	100L	2.2	6.0	62
40-250/224 PD	100L	2.2	6.0	78
40-250/304 PD	100L	3.0	8.0	83
40-250/404 PD	112M	4.0	10.0	93
40-250/554 PD	132S	5.5	13.0	104
40-250/754 PD	132M	7.5	16.5	119
40-250/1104 PD	160M	11.0	25.0	159
50-160/114 PD	90S	1.1	3.5	51
50-160/154 PD	90L	1.5	4.8	54
50-160/224 PD	100L	2.2	6.0	65
50-160/304 PD	100L	3.0	8.0	70
50-160/404 PD	112M	4.0	10.0	80
50-250/304 PD	100L	3.0	8.0	86
50-250/404 PD	112M	4.0	10.0	96
50-250/554 PD	132S	5.5	13.0	107
50-250/754 PD	132M	7.5	16.5	122
50-250/1104 PD	160M	11.0	25.0	162
65-160/154 PD	90L	1.5	4.8	57
65-160/224 PD	100L	2.2	6.0	67
65-160/304 PD	100L	3.0	8.0	72
65-160/404 PD	112M	4.0	10.0	82
65-160/554 PD	132S	5.5	13.0	93
65-250/304 PD	100L	3.0	8.0	91
65-250/404 PD	112M	4.0	10.0	101
65-250/554 PD	132S	5.5	13.0	112
65-250/754 PD	132M	7.5	16.5	127
65-250/1104 PD	160M	11.0	25.0	167
65-250/1504 PD	160L	15.0	31.0	193
80-160/154 PD	90L	1.5	4.8	62
80-160/224 PD	100L	2.2	6.0	73
80-160/304 PD	100L	3.0	8.0	78
80-160/404 PD	112M	4.0	10.0	88
80-160/554 PD	132S	5.5	13.0	99
80-160/754 PD	132M	7.5	16.5	114
80-210/404 PD	112M	4.0	10.0	100
80-210/554 PD	132S	5.5	13.0	111
80-210/754 PD	132M	7.5	16.5	126
80-210/1104 PD	160M	11.0	25.0	166
80-210/1504 PD	160L	15.0	31.0	192

Etaline PumpDrive	Motor			Weight ~ kg
	Size 4-pole	P ₂ ²⁾ kW	400 V ~ A	
80-250/554 PD	132S	5.5	13.0	121
80-250/754 PD	132M	7.5	16.5	134
80-250/1104 PD	160M	11.0	25.0	176
80-250/1504 PD	160L	15.0	31.0	202
80-250/1854 PD	180M	18.5	39.0	227
80-250/2204 PD	180L	22.0	45.0	247
100-125/154 PD	90L	1.5	4.8	71
100-125/224 PD	100L	2.2	6.0	81
100-125/304 PD	100L	3.0	8.0	86
100-125/404 PD	112M	4.0	10.0	96
100-160/154 PD	90L	1.5	4.8	68
100-160/224 PD	100L	2.2	6.0	79
100-160/304 PD	100L	3.0	8.0	84
100-160/404 PD	112M	4.0	10.0	94
100-160/554 PD	132S	5.5	13.0	105
100-160/754 PD	132M	7.5	16.5	120
100-170/224 PD	100L	2.2	6.0	90
100-170/304 PD	100L	3.0	8.0	95
100-170/404 PD	112M	4.0	10.0	105
100-170/554 PD	132S	5.5	13.0	116
100-170/754 PD	132M	7.5	16.5	131
100-170/1104 PD	160M	11.0	25.0	171
100-200/404 PD	112M	4.0	10.0	140
100-200/554 PD	132S	5.5	13.0	151
100-200/754 PD	132M	7.5	16.5	164
100-200/1104 PD	160M	11.0	25.0	205
100-200/1504 PD	160L	15.0	31.0	231
100-200/1854 PD	180M	18.5	39.0	257
100-200/2204 PD	180L	22.0	45.0	277
100-250/754 PD	132M	7.5	16.5	167
100-250/1104 PD	160M	11.0	25.0	208
100-250/1504 PD	160L	15.0	31.0	234
100-250/1854 PD	180M	18.5	39.0	260
100-250/2204 PD	180L	22.0	45.0	280
100-250/3004 PD	200L	30.0	65.0	359
100-250/3704 PD	225S	37.0	80.0	454
125-160/404 PD	112M	4.0	10.0	172
125-160/554 PD	132S	5.5	13.0	182
125-160/754 PD	132M	7.5	16.5	195
125-160/1104 PD	160M	11.0	25.0	236
125-160/1504 PD	160L	15.0	31.0	262
125-200/554 PD	132S	5.5	13.0	178
125-200/754 PD	132M	7.5	16.5	191
125-200/1104 PD	160M	11.0	25.0	233
125-200/1504 PD	160L	15.0	31.0	259
125-200/1854 PD	180M	18.5	39.0	284
125-200/2204 PD	180L	22.0	45.0	304
125-200/3004 PD	200L	30.0	65.0	384
125-250/754 PD	132M	7.5	16.5	200
125-250/1104 PD	160M	11.0	25.0	241
125-250/1504 PD	160L	15.0	31.0	267
125-250/1854 PD	180M	18.5	39.0	292
125-250/2204 PD	180L	22.0	45.0	312
125-250/3004 PD	200L	30.0	65.0	392
125-250/3704 PD	225S	37.0	80.0	487
125-250/4504 PD	225M	45.0	93.0	530

¹⁾ Rated speed = 1500 rpm

²⁾ Line choke included in scope of supply from motor rating P₂ ≤ 45 kW

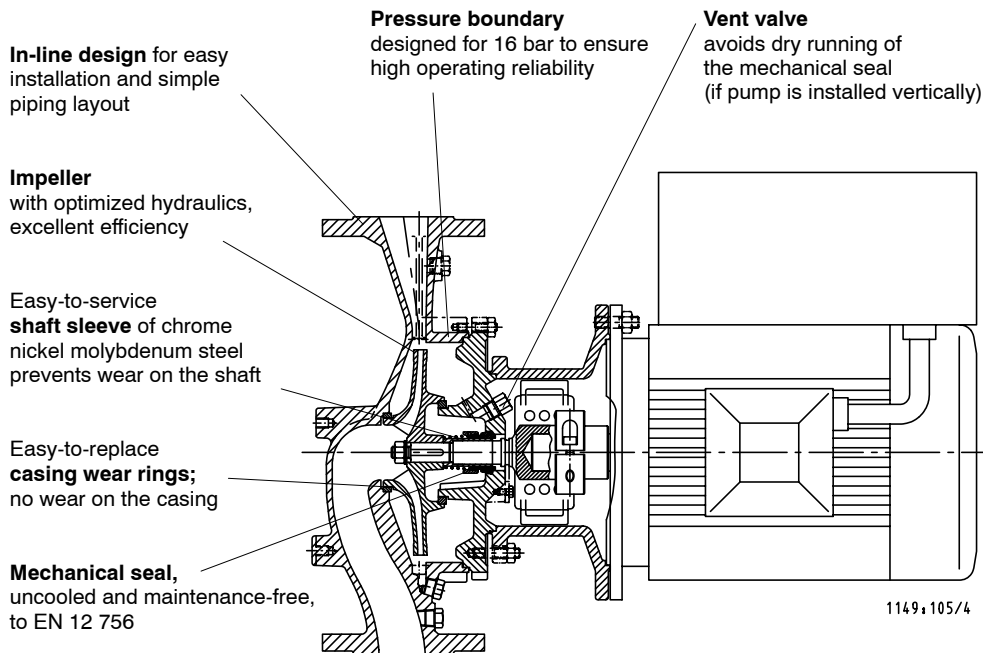
4-pole Models ¹⁾

Etaline PumpDrive	Motor			Weight ~ kg
	Size 4-pole	P ₂ ²⁾ kW	400 V ~ A	
150-200/754 PD	132M	7.5	16.5	227
150-200/1104 PD	160M	11.0	25.0	268
150-200/1504 PD	160L	15.0	31.0	294
150-200/1854 PD	180M	18.5	39.0	319
150-200/2204 PD	180L	22.0	45.0	339
150-200/3004 PD	200L	30.0	65.0	419
150-200/3704 PD	225S	37.0	80.0	514
150-200/4504 PD	225M	45.0	93.0	557
150-250/1104 PD	160M	11.0	25.0	261
150-250/1504 PD	160L	15.0	31.0	287
150-250/1854 PD	180M	18.5	39.0	313
150-250/2204 PD	180L	22.0	45.0	333
150-250/3004 PD	200L	30.0	65.0	412
150-250/3704 PD	225S	37.0	80.0	507
150-250/4504 PD	225M	45.0	93.0	550
200-250/1854 PD	180M	18.5	39.0	367
200-250/2204 PD	180L	22.0	45.0	387
200-250/3004 PD	200L	30.0	65.0	466
200-250/3704 PD	225S	37.0	80.0	561
200-250/4504 PD	225M	45.0	93.0	604
200-315/3004 PD	200L	30.0	65.0	473
200-315/3704 PD	225S	37.0	80.0	569
200-315/4504 PD	225M	45.0	93.0	612

¹⁾ Rated speed = 1500 rpm

²⁾ Line choke included in scope of supply from motor rating P₂ ≤ 45 kW

Mechanical Features



PumpDrive

Standard Functions

- Diagnostic LED signals operation, overload or fault
- Increased starting torque
- Min. and max. speed pump-specific ¹⁾
- Two isolated analog inputs for standard signals live zero yes / no ¹⁾
- Automatic restart after automatic safety tripping yes / no ¹⁾
- 3 restarting attempts within 3 seconds each ¹⁾
- Modes of operation: open-loop control / differential pressure control by integrated PI controller
- External standard signal 0/2 - 10 V / 0/4 - 20 mA
- General fault signalling contact (change-over contact 240 V AC, max. 1 A)
- Reference value (set point) setting via integrated potentiometer

¹⁾ optional with control panel

Protective Functions

- Electronic overcurrent trip
- Integrated EMC (electromagnetic compatibility) filter, Class B ≤ 7.5 kW, Class A ≥ 11 kW
- Automatic overload control
- Thermal overload control
- Full motor protection by PTC thermistors
- Undervoltage/overvoltage protection
- Phase short-circuit protection
- Protective earthing
- Dry-running protection
- Start/stop with digital input
- No motor protection or mains switch required

PumpDrive Features

Features	PumpDrive ...	
	Basic	Advanced
Protective functions		
Thermal motor protection by PTC thermistor	■	■
Electric motor protection by over-/undervoltage monitor	■	■
Dynamic overload protection by speed limit (i^2t control)	■	■
Dry running protection		■
Minimum flow stop		■
Characteristic curve monitor (Q_{min} , Q_{max})		■
Control		
Open-loop control via set point	■	■
Selectable speed (0 to 70 Hz)	■	■
Periodic check of operation (stop at minimum speed after a defined period of time)	■	■
Adjustable start and stop ramps	■	■
Slave in multiple-pump configuration with up to 6 pumps	■	■
Master in multiple-pump configuration with up to 6 pumps		■
Parameterisable H/Q/P curve		■
Control		
Close-loop control operation via integrated, variable PI controller	■	■
Differential pressure control	■	■
Level control	■	■
Temperature control	■	■
Flow control	■	■
Pressure control with flow-dependent set point adjustment (dynamic pressure compensation)	■	■
Commissioning/Start-up		
Plug & Run	■	■
Automatic sensor detection (at initial start of frequency inverter)	■	■
Operation		
3 LEDs (OK, warning and alert)	■	■
Control panel (optional), can be rotated by 180°	■	
Control panel, can be rotated by 180°		■
Monitoring		
Fault history	■	■
El. energy input meter (kWh)	■	
Operating hours meter (motor, frequency inverter)	■	■
Energy saving meter (kWh)		■
Communication		
Field bus system Profibus	■	■
Field bus system LON	■	■
RS 232 Service interface	■	■
Installation		
CM: in control cabinet IP 21	■	■
MM: with adapter on motor IP 55	■	■
WM: wall-mounted IP 55	■	■
Additional functions (planned)		
Sensorless flow rate estimate		■
Sensorless control		■

List of Fluids

Fluid pumped	Application limits	Casing/Impeller materials		Mechanical seal materials				Variant code	Comments
		Cast iron/ Cast iron	Cast iron/ Tin bronze	U3BEGG	U3U3VGG	Q1Q1X4GG	BQ1EGG		
		GN	MN	6	9	10	11		
Water ¹⁾									
Service water	$t \leq 110 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	
Heating water ⁴⁾	$t \leq 110 \text{ }^\circ\text{C}$, $p \leq 16 \text{ bar}$	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			GN 6	If used as circulator to DIN 4752; $p_{\text{max.}} \leq 10 \text{ bar}$
Heating water ⁴⁾	$t \leq 110 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	
Cooling water (without antifreeze agent)	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	Provide open-loop circuit MN 10
Cooling water pH value ≥ 7.5 (with antifreeze agent) ²⁾	$t \geq -10 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$ $t \leq 110 \text{ }^\circ\text{C}$	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	GN 11	
Slightly contaminated water	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	
Clean water ³⁾	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	GN 11	
Untreated water	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	
Swimming pool water, fresh water	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	In case of requirements as per DIN 19643, provide MN 10 (processing via product number)
Drinking water	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$		<input type="checkbox"/>				<input type="checkbox"/>	MN 11	
Partly desalinated water	$t \leq 110 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	GN 11	
Refrigerants, cooling brines									
Cooling brine, inorganic pH ≥ 7.5 , inhibited	$t \geq -10 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$ $t \leq 25 \text{ }^\circ\text{C}$	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	GN 11	
Water with antifreeze agent pH ≥ 7.5 ¹⁾ ²⁾	$t \geq -10 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$ $t \leq 110 \text{ }^\circ\text{C}$	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	GN 11	
Oils / emulsions									
Drilling / grinding emulsion	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		GN 9	
Oil / water emulsion	$t \leq 60 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>			<input type="checkbox"/>	<input type="checkbox"/>		GN 9	
Cleaning agents									
Degreasing/cleaning solutions pH 7 to 14	$t \leq 90 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	
Bottle rinsing lyes	$t \leq 90 \text{ }^\circ\text{C}$, $p \leq 10 \text{ bar}$	<input type="checkbox"/>				<input type="checkbox"/>		GN 10	

■ = Standard □ = Prices and delivery times upon request

Example:
Given:

 Clean water of $20 \text{ }^\circ\text{C}$, $Q = 60 \text{ m}^3/\text{h}$, $H = 15 \text{ m}$
Found: Etaline PumpDrive GN 80-160/404 GN 11

 Pump size as per selection chart

 Variant code

G = pump casing and impeller made of JL1040

N = stub shaft variant with standardized motor

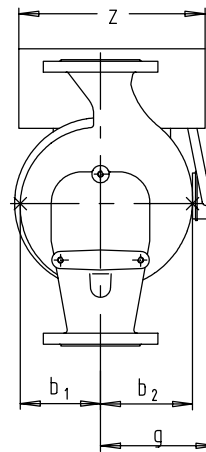
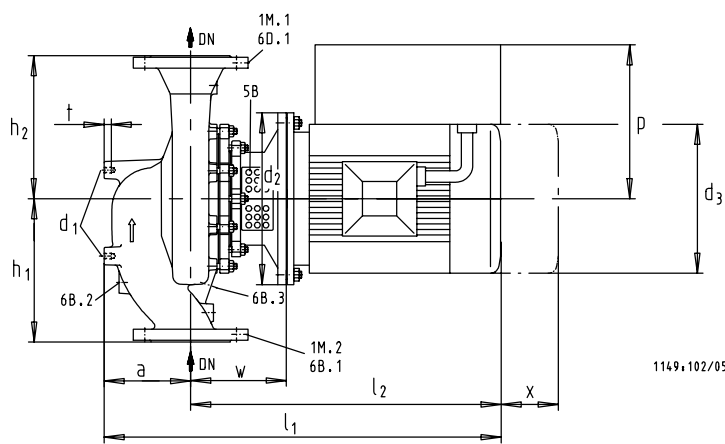
11 = mechanical seal materials BQ1EGG (to EN 12 756)

- 1) General evaluation criteria for water analysis: pH value ≥ 7 ; content of chlorides (Cl^-) $\leq 250 \text{ mg/kg}$, chlorine (Cl_2) $\leq 0.6 \text{ mg/kg}$.
- 2) Antifreeze agent on ethylene glycol basis with inhibitors. Content >20 to 50% (for example, Antifrogen N)
- 3) No ultrapure water: conductivity at $25 \text{ }^\circ\text{C}$: $\leq 800 \text{ } \mu\text{S/cm}$, neutral with regard to chemical corrosion
- 4) For heating water we recommend application of the VDI 2035 or Vd TÜV 1466 standards, otherwise a reduced service life of the mechanical seal may be the consequence.

Mechanical seal material codes:

- U3 = tungsten carbide (metal carbide)
- B = carbon, synthetic resin impregnated
- Q1 = silicon carbide
- G = CrNiMo steel
- V = fluorocarbon rubber (Viton)
- X4 = special elastomer
- E = EP rubber

Dimensions of 2-pole motors



- 1) DN = EN 1092-2, PN 16 (was DIN 2633)
- 2) Rc = ISO 7/1

1149.102/05

≈x	Minimum clearance for removal
1M.1/2	Pressure gauge
6B.1/2/3	Pumped fluid drain
6 D.1/2	Pumped fluid venting
5 B	Vent connection for the mechanical seal chamber

Tolerances of connecting dimensions as per EN 735

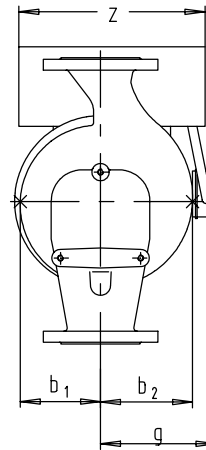
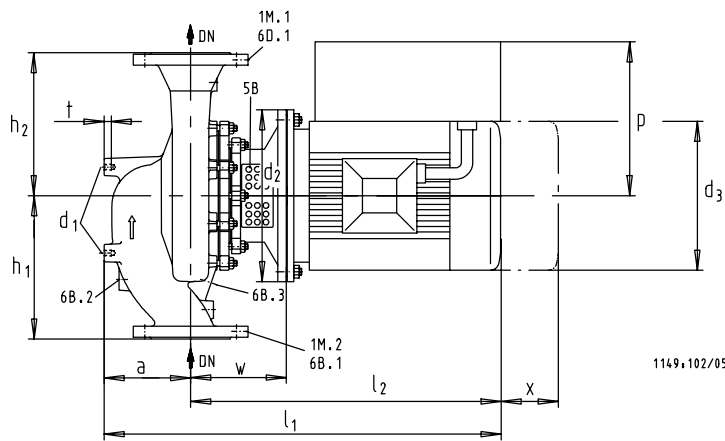
Dimensions in mm

Etaline Pump Drive	DN 1)	a	≈ b ₁	≈ b ₂	d ₁	d ₂	≈ d ₃	g	≈ p	h ₁	h ₂	≈ l ₁	≈ l ₂	t	x	w	z	1M.1/2 6B.1/3 6D.1 2)	6B.2 2)
32-160/302	32	69	112	120	M10	250	203	163	285	160	160	600	531	12.5	100	184	190	Rc 3/8	-
32-160/402	32	69	112	120	M10	250	227	-	340	160	160	624	555	12.5	100	184	250	Rc 3/8	-
32-160/552	32	69	112	120	M10	300	267	-	355	160	160	689	620	12.5	100	207	250	Rc 3/8	-
32-160/752	32	69	112	120	M10	300	267	-	355	160	160	689	620	12.5	100	207	250	Rc 3/8	-
32-160/1102	32	69	112	120	M10	350	320	-	440	160	160	855	786	12.5	100	240	320	Rc 3/8	-
32-200/552	32	95	129	135	M10	300	267	-	355	190	190	711	616	12.5	100	203	250	Rc 3/8	-
32-200/752	32	95	129	135	M10	300	267	-	355	190	190	711	616	12.5	100	203	250	Rc 3/8	-
32-200/1102	32	95	129	135	M10	350	320	-	440	190	190	877	782	12.5	100	236	320	Rc 3/8	-
32-200/1502	32	95	129	135	M10	350	320	-	440	190	190	877	782	12.5	100	236	320	Rc 3/8	-
32-200/1852	32	95	129	135	M10	350	320	-	440	190	190	883	788	12.5	100	236	320	Rc 3/8	-
40-160/402	40	80	112	119	M10	250	227	-	340	160	160	636	556	12.5	100	185	250	Rc 3/8	-
40-160/552	40	80	112	119	M10	300	267	-	355	160	160	701	621	12.5	100	208	250	Rc 3/8	-
40-160/752	40	80	112	119	M10	300	267	-	355	160	160	701	621	12.5	100	208	250	Rc 3/8	-
40-160/1102	40	80	112	119	M10	350	320	-	440	160	160	867	787	12.5	100	241	320	Rc 3/8	-
40-160/1502	40	80	112	119	M10	350	320	-	440	160	160	867	787	12.5	100	241	320	Rc 3/8	-
40-250/1102	40	95	161	168	M10	350	320	-	440	220	220	877	782	12.5	100	236	320	Rc 3/8	-
40-250/1502	40	95	161	168	M10	350	320	-	440	220	220	877	782	12.5	100	236	320	Rc 3/8	-
40-250/1852	40	95	161	168	M10	350	320	-	440	220	220	883	788	12.5	100	236	320	Rc 3/8	-
40-250/2202	40	95	161	168	M10	350	363	-	515	220	220	941	846	12.5	100	236	320	Rc 3/8	-
50-160/552	50	85	113	125	M10	300	267	-	355	170	170	711	626	12.5	100	213	250	Rc 3/8	-
50-160/752	50	85	113	125	M10	300	267	-	355	170	170	711	626	12.5	100	213	250	Rc 3/8	-
50-160/1102	50	85	113	125	M10	350	320	-	440	170	170	877	792	12.5	100	246	320	Rc 3/8	-
50-160/1502	50	85	113	125	M10	350	320	-	440	170	170	877	792	12.5	100	246	320	Rc 3/8	-
50-160/1852	50	85	113	125	M10	350	320	-	440	170	170	883	798	12.5	100	246	320	Rc 3/8	-
50-160/2202	50	85	113	125	M10	350	363	-	515	170	170	941	856	12.5	100	246	320	Rc 3/8	-
50-160/3002	50	85	113	125	M10	400	402	-	555	170	170	1000	915	12.5	100	246	450	Rc 3/8	-
50-250/1502	50	100	160	175	M10	350	320	-	440	220	220	887	787	12.5	100	241	320	Rc 3/8	-
50-250/1852	50	100	160	175	M10	350	320	-	440	220	220	893	793	12.5	100	241	320	Rc 3/8	-
50-250/2202	50	100	160	175	M10	350	363	-	515	220	220	951	851	12.5	100	241	320	Rc 3/8	-
50-250/3002	50	100	160	175	M10	400	402	-	555	220	220	1010	910	12.5	100	241	450	Rc 3/8	-
65-160/752	65	100	113	125	M10	300	267	-	355	170	170	726	626	12.5	100	213	250	Rc 3/8	-
65-160/1102	65	100	113	125	M10	350	320	-	440	170	170	892	792	12.5	100	246	320	Rc 3/8	-
65-160/1502	65	100	113	125	M10	350	320	-	440	170	170	892	792	12.5	100	246	320	Rc 3/8	-
65-160/1852	65	100	113	125	M10	350	320	-	440	170	170	898	798	12.5	100	246	320	Rc 3/8	-
65-160/2202	65	100	113	125	M10	350	363	-	515	170	170	956	856	12.5	100	246	320	Rc 3/8	-
65-160/3002	65	100	113	125	M10	400	402	-	555	170	170	1015	915	12.5	100	246	450	Rc 3/8	-
65-160/3702	65	100	113	125	M10	400	402	-	555	170	170	1015	915	12.5	100	246	450	Rc 3/8	-
65-250/1852	65	105	167	190	M10	350	320	-	440	225	250	908	803	12.5	100	251	320	Rc 3/8	-
65-250/2202	65	105	167	190	M10	350	363	-	515	225	250	966	861	12.5	100	251	320	Rc 3/8	-
65-250/3002	65	105	167	190	M10	400	402	-	555	225	250	1025	920	12.5	100	251	450	Rc 3/8	-
65-250/3702	65	105	167	190	M10	400	402	-	555	225	250	1025	920	12.5	100	251	450	Rc 3/8	-

Tolerances of connecting dimensions as per EN 735

Dimensions in mm

Etaline Pump Drive	DN ¹⁾	a	≈ b ₁	≈ b ₂	d ₁	d ₂	≈ d ₃	g	≈ p	h ₁	h ₂	≈ l ₁	≈ l ₂	t	x	w	z	1M.1/2 6B.1/3 6D.1 ²⁾	6B.2 ²⁾
80-160/752	80	97	113	135	M10	300	267	-	355	180	180	733	636	12.5	100	223	250	Rc ³ / ₈	-
80-160/1102	80	97	113	135	M10	350	320	-	440	180	180	899	802	12.5	100	256	320	Rc ³ / ₈	-
80-160/1502	80	97	113	135	M10	350	320	-	440	180	180	899	802	12.5	100	256	320	Rc ³ / ₈	-
80-160/1852	80	97	113	135	M10	350	320	-	440	180	180	905	808	12.5	100	256	320	Rc ³ / ₈	-
80-160/2202	80	97	113	135	M10	350	363	-	515	180	180	963	866	12.5	100	256	320	Rc ³ / ₈	-
80-160/3002	80	97	113	135	M10	400	402	-	555	180	180	1022	925	12.5	100	256	450	Rc ³ / ₈	-
80-160/3702	80	97	113	135	M10	400	402	-	555	180	180	1022	925	12.5	100	256	450	Rc ³ / ₈	-
80-210/1852	80	151	140	160	M10	350	320	-	440	250	250	929	778	12.5	140	226	320	Rc ³ / ₈	Rc ³ / ₈
80-210/2202	80	151	140	160	M10	350	363	-	515	250	250	987	836	12.5	140	226	320	Rc ³ / ₈	Rc ³ / ₈
80-210/3002	80	151	140	160	M10	400	402	-	555	250	250	1046	895	12.5	140	226	450	Rc ³ / ₈	Rc ³ / ₈
80-210/3702	80	151	140	160	M10	400	402	-	555	250	250	1046	895	12.5	140	226	450	Rc ³ / ₈	Rc ³ / ₈
80-250/3002	80	114	165	184	M10	400	402	-	555	250	250	1050	936	12.5	140	267	450	Rc ³ / ₈	-
80-250/3702	80	114	165	184	M10	400	402	-	555	250	250	1050	936	12.5	140	267	450	Rc ³ / ₈	-
80-250/4502	80	114	165	184	M10	450	442	-	670	250	250	1160	1046	12.5	140	291	450	Rc ³ / ₈	-
100-125/552	100	121	113	153	M10	300	267	-	355	230	220	736	615	12.5	100	202	250	Rc ¹ / ₂	-
100-125/752	100	121	113	153	M10	300	267	-	355	230	220	736	615	12.5	100	202	250	Rc ¹ / ₂	-
100-125/1102	100	121	113	153	M10	350	320	-	440	230	220	902	781	12.5	100	235	320	Rc ¹ / ₂	-
100-125/1502	100	121	113	153	M10	350	320	-	440	230	220	902	781	12.5	100	235	320	Rc ¹ / ₂	-
100-125/1852	100	121	113	153	M10	350	320	-	440	230	220	908	787	12.5	100	235	320	Rc ¹ / ₂	-
100-125/2202	100	121	113	153	M10	350	363	-	515	230	220	966	845	12.5	100	235	320	Rc ¹ / ₂	-
100-160/752	100	118	114	144	M10	300	267	-	355	250	200	741	623	12.5	100	210	250	Rc ¹ / ₂	-
100-160/1102	100	118	114	144	M10	350	320	-	440	250	200	907	789	12.5	100	243	320	Rc ¹ / ₂	-
100-160/1502	100	118	114	144	M10	350	320	-	440	250	200	907	789	12.5	100	243	320	Rc ¹ / ₂	-
100-160/1852	100	118	114	144	M10	350	320	-	440	250	200	913	795	12.5	100	243	320	Rc ¹ / ₂	-
100-160/2202	100	118	114	144	M10	350	363	-	515	250	200	971	853	12.5	100	243	320	Rc ¹ / ₂	-
100-160/3002	100	118	114	144	M10	400	402	-	555	250	200	1030	912	12.5	100	243	450	Rc ¹ / ₂	-
100-160/3702	100	118	114	144	M10	400	402	-	555	250	200	1030	912	12.5	100	243	450	Rc ¹ / ₂	-
100-170/1502	100	157	121	155	M20	350	320	-	440	245	205	949	792	25.0	100	246	320	Rc ¹ / ₂	-
100-170/1852	100	157	121	155	M20	350	320	-	440	245	205	955	798	25.0	100	246	320	Rc ¹ / ₂	-
100-170/2202	100	157	121	155	M20	350	363	-	515	245	205	1013	856	25.0	100	246	320	Rc ¹ / ₂	-
100-170/3002	100	157	121	155	M20	400	402	-	555	245	205	1072	915	25.0	100	246	450	Rc ¹ / ₂	-
100-170/3702	100	157	121	155	M20	400	402	-	555	245	205	1072	915	25.0	100	246	450	Rc ¹ / ₂	-
100-200/3002	100	180	166	195	M20	400	402	-	555	305	245	1095	915	25.0	140	246	450	Rc ¹ / ₂	Rc ¹ / ₂
100-200/3702	100	180	166	195	M20	400	402	-	555	305	245	1095	915	25.0	140	246	450	Rc ¹ / ₂	Rc ¹ / ₂
100-200/4502	100	180	166	195	M20	450	442	-	670	305	245	1205	1025	25.0	140	270	450	Rc ¹ / ₂	Rc ¹ / ₂
100-250/4502	100	158	191	212	M20	450	442	-	670	290	260	1207	1049	25.0	140	294	450	Rc ¹ / ₂	Rc ¹ / ₂
125-160/2202	125	203	173	220	M20	350	363	-	515	340	280	1059	856	25.0	140	246	320	Rc ¹ / ₂	Rc ¹ / ₂
125-160/3002	125	203	173	220	M20	400	402	-	555	340	280	1118	915	25.0	140	246	450	Rc ¹ / ₂	Rc ¹ / ₂
125-160/3702	125	203	173	220	M20	400	402	-	555	340	280	1118	915	25.0	140	246	450	Rc ¹ / ₂	Rc ¹ / ₂
125-160/4502	125	203	173	220	M20	450	442	-	670	340	280	1228	1025	25.0	140	270	450	Rc ¹ / ₂	Rc ¹ / ₂
125-200/3702	125	207	175	213	M20	400	402	-	555	340	280	1122	915	25.0	140	246	450	Rc ¹ / ₂	Rc ¹ / ₂
125-200/4502	125	207	175	213	M20	450	442	-	670	340	280	1232	1025	25.0	140	270	450	Rc ¹ / ₂	Rc ¹ / ₂

Dimensions of 4-pole motors


- 1) DN = EN 1092-2, PN 16 (was DIN 2633)
 2) Rc = ISO 7/1

1149.102/05

≈x	Minimum clearance for removal
1M.1/2	Pressure gauge
6B.1./2./3	Pumped fluid drain
6 D.1./2	Pumped fluid venting
5 B	Vent connection for the mechanical seal chamber

Tolerances of connecting dimensions as per EN 735

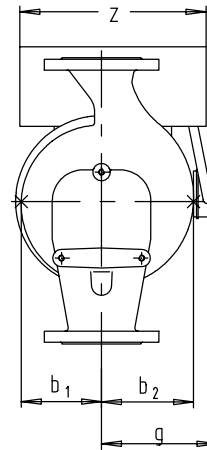
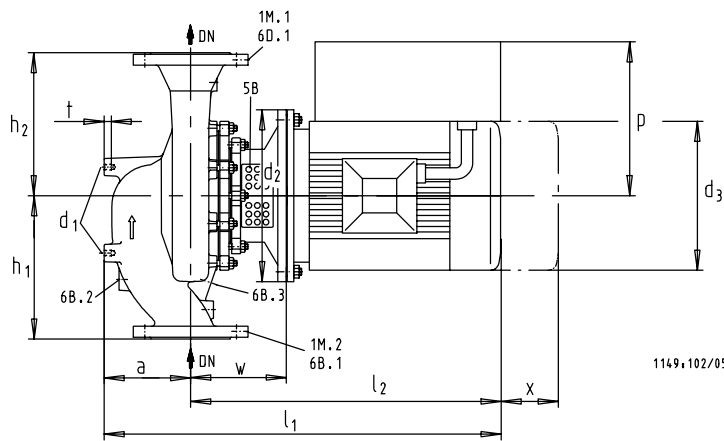
Dimensions in mm

Etaline Pump Drive	DN 1)	a	≈ b ₁	≈ b ₂	d ₁	d ₂	≈ d ₃	g	≈ p	h ₁	h ₂	≈ l ₁	≈ l ₂	t	x	w	z	1M.1/2 6B.1./3 6D.1 2)	6B.2 2)
32-160/054	32	69	112	120	M10	200	163	120	265	160	160	494	425	12.5	100	170	190	Rc 3/8	-
32-160/074	32	69	112	120	M10	200	163	120	265	160	160	494	425	12.5	100	170	190	Rc 3/8	-
32-160/114	32	69	112	120	M10	200	180	128	265	160	160	521	452	12.5	100	170	190	Rc 3/8	-
32-160/154	32	69	112	120	M10	200	180	128	275	160	160	547	478	12.5	100	170	190	Rc 3/8	-
32-160/224	32	69	112	120	M10	250	203	163	285	160	160	600	531	12.5	100	184	190	Rc 3/8	-
32-200/114	32	95	129	135	M10	200	180	128	265	190	190	543	448	12.5	100	166	190	Rc 3/8	-
32-200/154	32	95	129	135	M10	200	180	128	275	190	190	569	474	12.5	100	166	190	Rc 3/8	-
32-200/224	32	95	129	135	M10	250	203	163	285	190	190	622	527	12.5	100	180	190	Rc 3/8	-
32-200/304	32	95	129	135	M10	250	203	163	285	190	190	657	562	12.5	100	180	190	Rc 3/8	-
32-200/404	32	95	129	135	M10	250	227	-	340	190	190	646	551	12.5	100	180	250	Rc 3/8	-
40-160/054	40	80	112	119	M10	200	163	120	265	160	160	506	426	12.5	100	171	190	Rc 3/8	-
40-160/074	40	80	112	119	M10	200	163	120	265	160	160	506	426	12.5	100	171	190	Rc 3/8	-
40-160/114	40	80	112	119	M10	200	180	128	265	160	160	533	453	12.5	100	171	190	Rc 3/8	-
40-160/154	40	80	112	119	M10	200	180	128	275	160	160	559	479	12.5	100	171	190	Rc 3/8	-
40-160/224	40	80	112	119	M10	250	203	163	285	160	160	612	532	12.5	100	185	190	Rc 3/8	-
40-250/224	40	95	161	168	M10	250	203	163	285	220	220	622	527	12.5	100	180	190	Rc 3/8	-
40-250/304	40	95	161	168	M10	250	203	163	285	220	220	657	562	12.5	100	180	190	Rc 3/8	-
40-250/404	40	95	161	168	M10	250	227	-	340	220	220	646	551	12.5	100	180	250	Rc 3/8	-
40-250/554	40	95	161	168	M10	300	267	-	350	220	220	711	616	12.5	100	203	250	Rc 3/8	-
40-250/754	40	95	161	168	M10	300	267	-	350	220	220	739	644	12.5	100	203	250	Rc 3/8	-
40-250/1104	40	95	161	168	M10	350	320	-	440	220	220	877	782	12.5	100	236	320	Rc 3/8	-
50-160/114	50	85	113	125	M10	200	180	128	265	170	170	543	458	12.5	100	176	190	Rc 3/8	-
50-160/154	50	85	113	125	M10	200	180	128	275	170	170	569	484	12.5	100	176	190	Rc 3/8	-
50-160/224	50	85	113	125	M10	250	203	163	285	170	170	622	537	12.5	100	190	190	Rc 3/8	-
50-160/304	50	85	113	125	M10	250	203	163	285	170	170	657	572	12.5	100	190	190	Rc 3/8	-
50-160/404	50	85	113	125	M10	250	227	-	340	170	170	646	561	12.5	100	190	250	Rc 3/8	-
50-250/304	50	100	160	175	M10	250	203	163	285	220	220	667	567	12.5	100	185	190	Rc 3/8	-
50-250/404	50	100	160	175	M10	250	227	-	340	220	220	656	556	12.5	100	185	250	Rc 3/8	-
50-250/554	50	100	160	175	M10	300	267	-	350	220	220	721	621	12.5	100	208	250	Rc 3/8	-
50-250/754	50	100	160	175	M10	300	267	-	350	220	220	749	649	12.5	100	208	250	Rc 3/8	-
50-250/1104	50	100	160	175	M10	350	320	-	440	220	220	887	787	12.5	100	241	320	Rc 3/8	-
65-160/154	65	100	113	125	M10	200	180	128	275	170	170	584	484	12.5	100	176	190	Rc 3/8	-
65-160/224	65	100	113	125	M10	250	203	163	285	170	170	637	537	12.5	100	190	190	Rc 3/8	-
65-160/304	65	100	113	125	M10	250	203	163	285	170	170	672	572	12.5	100	190	190	Rc 3/8	-
65-160/404	65	100	113	125	M10	250	227	-	340	170	170	661	561	12.5	100	190	250	Rc 3/8	-
65-160/554	65	100	113	125	M10	300	267	-	350	170	170	726	626	12.5	100	213	250	Rc 3/8	-
65-250/304	65	105	167	190	M10	250	203	163	285	225	250	682	577	12.5	100	195	190	Rc 3/8	-
65-250/404	65	105	167	190	M10	250	227	-	340	225	250	671	566	12.5	100	195	250	Rc 3/8	-
65-250/554	65	105	167	190	M10	300	267	-	350	225	250	736	631	12.5	100	218	250	Rc 3/8	-
65-250/754	65	105	167	190	M10	300	267	-	350	225	250	764	659	12.5	100	218	250	Rc 3/8	-
65-250/1104	65	105	167	190	M10	350	320	-	440	225	250	902	797	12.5	100	251	320	Rc 3/8	-
65-250/1504	65	105	167	190	M10	350	320	-	440	225	250	908	803	12.5	100	251	320	Rc 3/8	-

Tolerances of connecting dimensions as per EN 735

Dimensions in mm

Etaline Pump Drive	DN ¹⁾	a	≈ b ₁	≈ b ₂	d ₁	d ₂	≈ d ₃	g	≈ p	h ₁	h ₂	≈ l ₁	≈ l ₂	t	x	w	z	1M.1/2 6B.1/3 6D.1 ²⁾	6B.2 ²⁾
80-160/154	80	97	113	135	M10	200	180	128	275	180	180	591	494	12.5	100	186	190	Rc 3/8	-
80-160/224	80	97	113	135	M10	250	203	163	285	180	180	644	547	12.5	100	200	190	Rc 3/8	-
80-160/304	80	97	113	135	M10	250	203	163	285	180	180	679	582	12.5	100	200	190	Rc 3/8	-
80-160/404	80	97	113	135	M10	250	227	-	340	180	180	668	571	12.5	100	200	250	Rc 3/8	-
80-160/554	80	97	113	135	M10	300	267	-	350	180	180	733	636	12.5	100	223	250	Rc 3/8	-
80-160/754	80	97	113	135	M10	300	267	-	350	180	180	761	664	12.5	100	223	250	Rc 3/8	-
80-210/404	80	151	140	160	M10	250	227	-	340	250	250	692	541	12.5	140	170	250	Rc 3/8	Rc 3/8
80-210/554	80	151	140	160	M10	300	267	-	350	250	250	757	606	12.5	140	193	250	Rc 3/8	Rc 3/8
80-210/754	80	151	140	160	M10	300	267	-	350	250	250	785	634	12.5	140	193	250	Rc 3/8	Rc 3/8
80-210/1104	80	151	140	160	M10	350	320	-	440	250	250	923	772	12.5	140	226	320	Rc 3/8	Rc 3/8
80-210/1504	80	151	140	160	M10	350	320	-	440	250	250	929	778	12.5	140	226	320	Rc 3/8	Rc 3/8
80-250/554	80	114	165	184	M10	300	267	-	350	250	250	761	647	12.5	140	234	250	Rc 3/8	-
80-250/754	80	114	165	184	M10	300	267	-	350	250	250	789	675	12.5	140	234	250	Rc 3/8	-
80-250/1104	80	114	165	184	M10	350	320	-	440	250	250	927	813	12.5	140	267	320	Rc 3/8	-
80-250/1504	80	114	165	184	M10	350	320	-	440	250	250	933	819	12.5	140	267	320	Rc 3/8	-
80-250/1854	80	114	165	184	M10	350	363	-	515	250	250	991	877	12.5	140	267	320	Rc 3/8	-
80-250/2204	80	114	165	184	M10	350	363	-	515	250	250	991	877	12.5	140	267	320	Rc 3/8	-
100-125/154	100	121	113	153	M10	200	180	128	275	230	220	594	473	12.5	100	165	190	Rc 1/2	-
100-125/224	100	121	113	153	M10	250	203	163	285	230	220	647	526	12.5	100	179	190	Rc 1/2	-
100-125/304	100	121	113	153	M10	250	203	163	285	230	220	682	561	12.5	100	179	190	Rc 1/2	-
100-125/404	100	121	113	153	M10	250	227	-	340	230	220	671	550	12.5	100	179	250	Rc 1/2	-
100-160/154	100	118	114	144	M10	200	180	128	275	250	200	599	481	12.5	100	173	190	Rc 1/2	-
100-160/224	100	118	114	144	M10	250	203	163	285	250	200	652	534	12.5	100	187	190	Rc 1/2	-
100-160/304	100	118	114	144	M10	250	203	163	285	250	200	687	569	12.5	100	187	190	Rc 1/2	-
100-160/404	100	118	114	144	M10	250	227	-	340	250	200	676	558	12.5	100	187	250	Rc 1/2	-
100-160/554	100	118	114	144	M10	300	267	-	350	250	200	741	623	12.5	100	210	250	Rc 1/2	-
100-160/754	100	118	114	144	M10	300	267	-	350	250	200	769	651	12.5	100	210	250	Rc 1/2	-
100-170/224	100	157	121	155	M20	250	203	163	285	245	205	694	537	25.0	100	190	190	Rc 1/2	-
100-170/304	100	157	121	155	M20	250	203	163	285	245	205	729	572	25.0	100	190	190	Rc 1/2	-
100-170/404	100	157	121	155	M20	250	227	-	340	245	205	718	561	25.0	100	190	250	Rc 1/2	-
100-170/554	100	157	121	155	M20	300	267	-	350	245	205	783	626	25.0	100	213	250	Rc 1/2	-
100-170/754	100	157	121	155	M20	300	267	-	350	245	205	811	654	25.0	100	213	250	Rc 1/2	-
100-170/1104	100	157	121	155	M20	350	320	-	440	245	205	949	792	25.0	100	246	320	Rc 1/2	-
100-200/404	100	180	166	195	M20	250	227	-	340	305	245	741	561	25.0	140	190	250	Rc 1/2	Rc 1/2
100-200/554	100	180	166	195	M20	300	267	-	350	305	245	806	626	25.0	140	213	250	Rc 1/2	Rc 1/2
100-200/754	100	180	166	195	M20	300	267	-	350	305	245	834	654	25.0	140	213	250	Rc 1/2	Rc 1/2
100-200/1104	100	180	166	195	M20	350	320	-	440	305	245	972	792	25.0	140	246	320	Rc 1/2	Rc 1/2
100-200/1504	100	180	166	195	M20	350	320	-	440	305	245	978	798	25.0	140	246	320	Rc 1/2	Rc 1/2
100-200/1854	100	180	166	195	M20	350	363	-	515	305	245	1036	856	25.0	140	246	320	Rc 1/2	Rc 1/2
100-200/2204	100	180	166	195	M20	350	363	-	515	305	245	1036	856	25.0	140	246	320	Rc 1/2	Rc 1/2
100-250/754	100	158	191	212	M20	300	267	-	350	290	260	836	678	25.0	140	237	250	Rc 1/2	Rc 1/2
100-250/1104	100	158	191	212	M20	350	320	-	440	290	260	974	816	25.0	140	270	320	Rc 1/2	Rc 1/2
100-250/1504	100	158	191	212	M20	350	320	-	440	290	260	980	822	25.0	140	270	320	Rc 1/2	Rc 1/2
100-250/1854	100	158	191	212	M20	350	363	-	515	290	260	1038	880	25.0	140	270	320	Rc 1/2	Rc 1/2
100-250/2204	100	158	191	212	M20	350	363	-	515	290	260	1038	880	25.0	140	270	320	Rc 1/2	Rc 1/2
100-250/3004	100	158	191	212	M20	400	402	-	555	290	260	1097	939	25.0	140	270	450	Rc 1/2	Rc 1/2
100-250/3704	100	158	191	212	M20	450	442	-	670	290	260	1147	989	25.0	140	294	450	Rc 1/2	Rc 1/2

Dimensions of 4-pole motors


- 1) DN = EN 1092-2, PN 16 (was DIN 2633)
 2) Rc = ISO 7/1

≈x	Minimum clearance for removal
1M.1/2	Pressure gauge
6B.1./2./3	Pumped fluid drain
6 D.1./2	Pumped fluid venting
5 B	Vent connection for the mechanical seal chamber

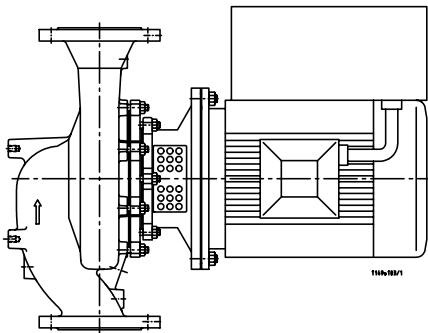
Tolerances of connecting dimensions as per EN 735

Dimensions in mm

Etaline Pump Drive	DN ¹⁾	a	≈ b ₁	≈ b ₂	d ₁	d ₂	≈d ₃	g	≈p	h ₁	h ₂	≈l ₁	≈l ₂	t	x	w	z	1M.1/2 6B.1./3 6D.1 ²⁾	6B.2 ²⁾
125-160/404	125	203	173	220	M20	250	227	-	340	340	280	764	561	25.0	140	190	250	Rc 1/2	Rc 1/2
125-160/554	125	203	173	220	M20	300	267	-	350	340	280	829	626	25.0	140	213	250	Rc 1/2	Rc 1/2
125-160/754	125	203	173	220	M20	300	267	-	350	340	280	857	654	25.0	140	213	250	Rc 1/2	Rc 1/2
125-160/1104	125	203	173	220	M20	350	320	-	440	340	280	995	792	25.0	140	246	320	Rc 1/2	Rc 1/2
125-160/1504	125	203	173	220	M20	350	320	-	440	340	280	1001	798	25.0	140	246	320	Rc 1/2	Rc 1/2
125-200/554	125	207	175	213	M20	300	267	-	350	340	280	833	626	25.0	140	213	250	Rc 1/2	Rc 1/2
125-200/754	125	207	175	213	M20	300	267	-	350	340	280	861	654	25.0	140	213	250	Rc 1/2	Rc 1/2
125-200/1104	125	207	175	213	M20	350	320	-	440	340	280	999	792	25.0	140	246	320	Rc 1/2	Rc 1/2
125-200/1504	125	207	175	213	M20	350	320	-	440	340	280	1005	798	25.0	140	246	320	Rc 1/2	Rc 1/2
125-200/1854	125	207	175	213	M20	350	363	-	515	340	280	1063	856	25.0	140	246	320	Rc 1/2	Rc 1/2
125-200/2204	125	207	175	213	M20	350	363	-	515	340	280	1063	856	25.0	140	246	320	Rc 1/2	Rc 1/2
125-200/3004	125	207	175	213	M20	400	402	-	555	340	280	1122	915	25.0	140	246	450	Rc 1/2	Rc 1/2
125-250/754	125	212	183	215	M20	300	267	-	350	340	280	866	654	25.0	140	213	250	Rc 1/2	Rc 1/2
125-250/1104	125	212	183	215	M20	350	320	-	440	340	280	1004	792	25.0	140	246	320	Rc 1/2	Rc 1/2
125-250/1504	125	212	183	215	M20	350	320	-	440	340	280	1010	798	25.0	140	246	320	Rc 1/2	Rc 1/2
125-250/1854	125	212	183	215	M20	350	363	-	515	340	280	1068	856	25.0	140	246	320	Rc 1/2	Rc 1/2
125-250/2204	125	212	183	215	M20	350	363	-	515	340	280	1068	856	25.0	140	246	320	Rc 1/2	Rc 1/2
125-250/3004	125	212	183	215	M20	400	402	-	555	340	280	1127	915	25.0	140	246	450	Rc 1/2	Rc 1/2
125-250/3704	125	212	183	215	M20	450	442	-	670	340	280	1177	965	25.0	140	270	450	Rc 1/2	Rc 1/2
125-250/4504	125	212	183	215	M20	450	442	-	670	340	280	1207	995	25.0	140	270	450	Rc 1/2	Rc 1/2
150-200/754	150	226	185	235	M20	300	267	-	350	375	315	880	654	25.0	140	213	250	Rc 1/2	Rc 1/2
150-200/1104	150	226	185	235	M20	350	320	-	440	375	315	1018	792	25.0	140	246	320	Rc 1/2	Rc 1/2
150-200/1504	150	226	185	235	M20	350	320	-	440	375	315	1024	798	25.0	140	246	320	Rc 1/2	Rc 1/2
150-200/1854	150	226	185	235	M20	350	363	-	515	375	315	1082	856	25.0	140	246	320	Rc 1/2	Rc 1/2
150-200/2204	150	226	185	235	M20	350	363	-	515	375	315	1082	856	25.0	140	246	320	Rc 1/2	Rc 1/2
150-200/3004	150	226	185	235	M20	400	402	-	555	375	315	1141	915	25.0	140	246	450	Rc 1/2	Rc 1/2
150-200/3704	150	226	185	235	M20	450	442	-	670	375	315	1191	965	25.0	140	270	450	Rc 1/2	Rc 1/2
150-200/4504	150	226	185	235	M20	450	442	-	670	375	315	1221	995	25.0	140	270	450	Rc 1/2	Rc 1/2
150-250/1104	150	220	221	270	M20	350	320	-	440	370	330	1012	792	25.0	140	246	320	Rc 1/2	Rc 1/2
150-250/1504	150	220	221	270	M20	350	320	-	440	370	330	1018	798	25.0	140	246	320	Rc 1/2	Rc 1/2
150-250/1854	150	220	221	270	M20	350	363	-	515	370	330	1076	856	25.0	140	246	320	Rc 1/2	Rc 1/2
150-250/2204	150	220	221	270	M20	350	363	-	515	370	330	1076	856	25.0	140	246	320	Rc 1/2	Rc 1/2
150-250/3004	150	220	221	270	M20	400	402	-	555	370	330	1135	915	25.0	140	246	450	Rc 1/2	Rc 1/2
150-250/3704	150	220	221	270	M20	450	442	-	670	370	330	1185	965	25.0	140	270	450	Rc 1/2	Rc 1/2
150-250/4504	150	220	221	270	M20	450	442	-	670	370	330	1215	995	25.0	140	270	450	Rc 1/2	Rc 1/2
200-250/1854	200	222	235	299	M20	350	363	-	515	400	400	1131	909	25.0	140	299	320	Rc 1/2	Rc 1/2
200-250/2204	200	222	235	299	M20	350	363	-	515	400	400	1131	909	25.0	140	299	320	Rc 1/2	Rc 1/2
200-250/3004	200	222	235	299	M20	400	402	-	555	400	400	1190	968	25.0	140	299	450	Rc 1/2	Rc 1/2
200-250/3704	200	222	235	299	M20	450	442	-	670	400	400	1240	1018	25.0	140	323	450	Rc 1/2	Rc 1/2
200-250/4504	200	222	235	299	M20	450	442	-	670	400	400	1270	1048	25.0	140	323	450	Rc 1/2	Rc 1/2
200-315/3004	200	225	255	313	M20	400	402	-	555	410	410	1212	987	25.0	140	318	450	Rc 1/2	Rc 1/2
200-315/3704	200	225	255	313	M20	450	442	-	670	410	410	1268	1043	25.0	140	348	450	Rc 1/2	Rc 1/2
200-315/4504	200	225	255	313	M20	450	442	-	670	410	410	1298	1073	25.0	140	348	450	Rc 1/2	Rc 1/2

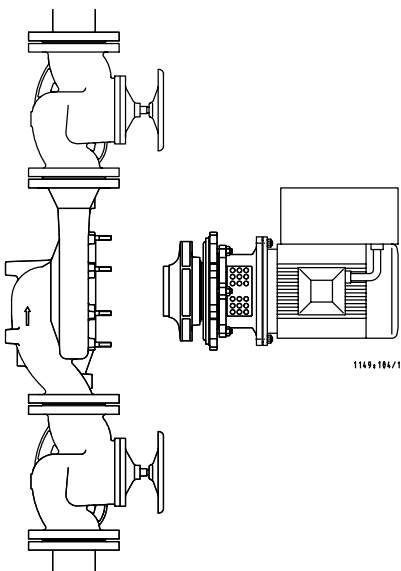
Horizontal Installation

If the direction of flow is from top to bottom, the motor must be turned by 180° so that the frequency inverter remains in its position on top.

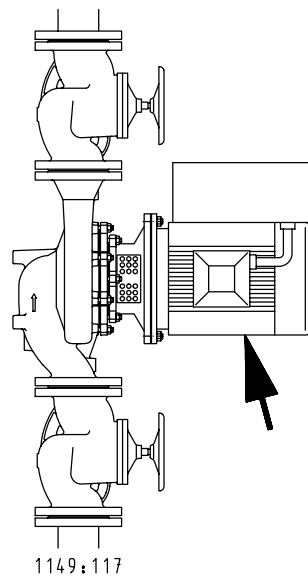


If flexible pipe joints are used, Etaline PumpDrive has to be additionally fixed.

Dismantling the Pull-out Unit



Support



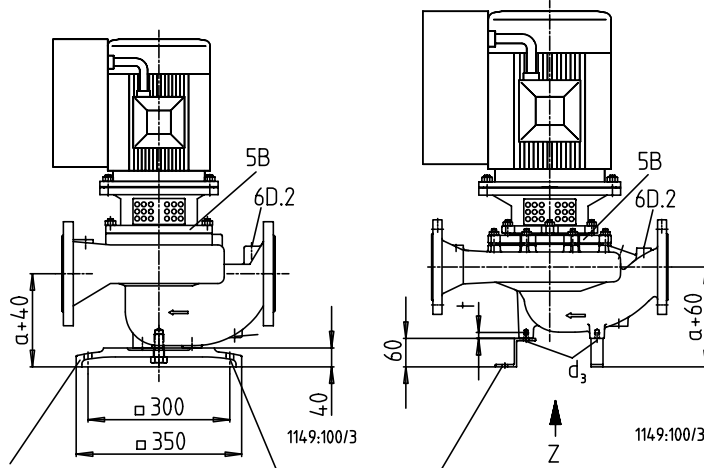
Motors of size 160 and above on Etaline PumpDrive units with horizontal motor axis need to be adequately supported. The foot fixing holes on the motor housing can be used for this purpose.

Vertical Installation

Pump sizes Etaline PD 32-160/.. to 100-160/.. to be mounted on a baseplate are fixed by three steel angle feet.

Pump sizes 100-170/.. to 200-315/.. are fixed by a cast iron (GJL) pump foot (separate accessory).

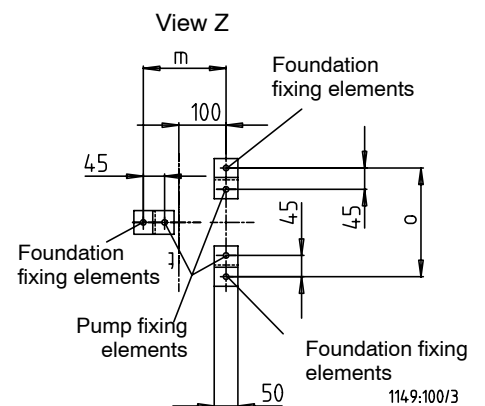
If the pump set is installed vertically, the pump must be vented through vent valve B5 so as to avoid dry running of the mechanical seal.



With cast iron pump foot

With three angle feet

For 4 bolts M12



2-pole Models

Etaline PumpDrive Advanced	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
32-160/302 PDA(X)	48 877 699	48 877 848	48 878 295	48 878 444
32-160/402 PDA(X)	48 877 700	48 877 849	48 878 296	48 878 445
32-160/552 PDA(X)	48 877 701	48 877 850	48 878 297	48 878 446
32-160/752 PDA(X)	48 877 702	48 877 851	48 878 298	48 878 447
32-160/1102 PDA(X)	48 877 703	48 877 852	48 878 299	48 878 448
32-200/552 PDA(X)	48 877 704	48 877 853	48 878 300	48 878 449
32-200/752 PDA(X)	48 877 705	48 877 854	48 878 301	48 878 450
32-200/1102 PDA(X)	48 877 706	48 877 855	48 878 302	48 878 451
32-200/1502 PDA(X)	48 877 707	48 877 856	48 878 303	48 878 452
32-200/1852 PDA(X)				
40-160/402 PDA(X)	48 877 708	48 877 857	48 878 304	48 878 453
40-160/552 PDA(X)	48 877 709	48 877 858	48 878 305	48 878 454
40-160/752 PDA(X)	48 877 710	48 877 859	48 878 306	48 878 455
40-160/1102 PDA(X)	48 877 711	48 877 860	48 878 307	48 878 456
40-160/1502 PDA(X)				
40-250/1102 PDA(X)	48 877 712	48 877 861	48 878 308	48 878 457
40-250/1502 PDA(X)	48 877 713	48 877 862	48 878 309	48 878 458
40-250/1852 PDA(X)	48 877 714	48 877 863	48 878 310	48 878 459
40-250/2202 PDA(X)	48 877 715	48 877 864	48 878 311	48 878 460
50-160/552 PDA(X)	48 877 716	48 877 865	48 878 312	48 878 461
50-160/752 PDA(X)	48 877 717	48 877 866	48 878 313	48 878 462
50-160/1102 PDA(X)	48 877 718	48 877 867	48 878 314	48 878 463
50-160/1502 PDA(X)	48 877 719	48 877 868	48 878 315	48 878 464
50-160/1852 PDA(X)	48 877 720	48 877 869	48 878 316	48 878 465
50-160/2202 PDA(X)	48 877 721	48 877 870	48 878 317	48 878 466
50-160/3002 PDA(X)				
50-250/1502 PDA(X)	48 877 722	48 877 871	48 878 318	48 878 467
50-250/1852 PDA(X)	48 877 723	48 877 872	48 878 319	48 878 468
50-250/2202 PDA(X)	48 877 724	48 877 873	48 878 320	48 878 469
50-250/3002 PDA(X)				
65-160/752 PDA(X)	48 877 725	48 877 874	48 878 321	48 878 470
65-160/1102 PA(X)D	48 877 726	48 877 875	48 878 322	48 878 471
65-160/1502 PDA(X)	48 877 727	48 877 876	48 878 323	48 878 472
65-160/1852 PDA(X)	48 877 728	48 877 877	48 878 324	48 878 473
65-160/2202 PDA(X)	48 877 729	48 877 878	48 878 325	48 878 474
65-160/3002 PDA(X)				
65-160/3702 PDA(X)				
65-250/1852 PDA(X)				
65-250/2202 PDA(X)				
65-250/3002 PDA(X)				
65-250/3702 PDA(X)				
80-160/752 PDA(X)	48 877 730	48 877 879	48 878 326	48 878 475
80-160/1102 PDA(X)	48 877 731	48 877 880	48 878 327	48 878 476
80-160/1502 PDA(X)	48 877 732	48 877 881	48 878 328	48 878 477
80-160/1852 PDA(X)	48 877 733	48 877 882	48 878 329	48 878 478
80-160/2202 PDA(X)	48 877 734	48 877 883	48 878 330	48 878 479
80-160/3002 PDA(X)				
80-160/3702 PDA(X)				
80-210/1852 PDA(X)				
80-210/2202 PDA(X)				
80-210/3002 PDA(X)				
80-210/3702 PDA(X)				
80-250/3002 PDA(X)				
80-250/3702 PDA(X)				
80-250/4502 PDA(X)				

2-pole Models

Etaline PumpDrive Advanced	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
100-125/552 PDA(X)	48 877 735	48 877 884	48 878 331	48 878 480
100-125/752 PDA(X)	48 877 736	48 877 885	48 878 332	48 878 481
100-125/1102 PDA(X)	48 877 737	48 877 886	48 878 333	48 878 482
100-125/1502 PDA(X)	48 877 738	48 877 887	48 878 334	48 878 483
100-125/1852 PDA(X)	48 877 739	48 877 888	48 878 335	48 878 484
100-125/2202 PDA(X)	48 877 740	48 877 889	48 878 336	48 878 485
100-160/752 PDA(X)	48 877 741	48 877 890	48 878 337	48 878 486
100-160/1102 PDA(X)	48 877 742	48 877 891	48 878 338	48 878 487
100-160/1502 PDA(X)	48 877 743	48 877 892	48 878 339	48 878 488
100-160/1852 PDA(X)	48 877 744	48 877 893	48 878 340	48 878 489
100-160/2202 PDA(X)	48 877 745	48 877 894	48 878 341	48 878 490
100-160/3002 PDA(X)				
100-160/3702 PDA(X)				
100-170/1102 PDA(X)	48 877 746	48 877 895	48 878 342	48 878 491
100-170/1502 PDA(X)	48 877 747	48 877 896	48 878 343	48 878 492
100-170/1852 PDA(X)	48 877 748	48 877 897	48 878 344	48 878 493
100-170/2202 PDA(X)	48 877 749	48 877 898	48 878 345	48 878 494
100-170/3002 PDA(X)				
100-170/3702 PDA(X)				
100-200/3002 PDA(X)				
100-200/3702 PDA(X)				
100-200/4502 PDA(X)				
100-250/4502 PDA(X)				
125-160/2202 PDA(X)				
125-160/3002 PDA(X)				
125-160/3702 PDA(X)				
125-160/4502 PDA(X)				
125-200/3702 PDA(X)				
125-200/4502 PDA(X)				

2-pole Models

Etaline PumpDrive Basic	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
32-160/302 PDB(X)	48 877 401	48 877 550	48 877 997	48 878 146
32-160/402 PDB(X)	48 877 402	48 877 551	48 877 998	48 878 147
32-160/552 PDB(X)	48 877 403	48 877 552	48 877 999	48 878 148
32-160/752 PDB(X)	48 877 404	48 877 553	48 878 000	48 878 149
32-160/1102 PDB(X)	48 877 405	48 877 554	48 878 001	48 878 150
32-200/552 PDB(X)	48 877 406	48 877 555	48 878 002	48 878 151
32-200/752 PDB(X)	48 877 407	48 877 556	48 878 003	48 878 152
32-200/1102 PDB(X)	48 877 408	48 877 557	48 878 004	48 878 153
32-200/1502 PDB(X)	48 877 409	48 877 558	48 878 005	48 878 154
32-200/1852 PDB(X)				
40-160/402 PDB(X)	48 877 410	48 877 559	48 878 006	48 878 155
40-160/552 PDB(X)	48 877 411	48 877 560	48 878 007	48 878 156
40-160/752 PDB(X)	48 877 412	48 877 561	48 878 008	48 878 157
40-160/1102 PDB(X)	48 877 413	48 877 562	48 878 009	48 878 158
40-160/1502 PDB(X)				
40-250/1102 PDB(X)	48 877 414	48 877 563	48 878 010	48 878 159
40-250/1502 PDB(X)	48 877 415	48 877 564	48 878 011	48 878 160
40-250/1852 PDB(X)	48 877 416	48 877 565	48 878 012	48 878 161
40-250/2202 PDB(X)	48 877 417	48 877 566	48 878 013	48 878 162
50-160/552 PDB(X)	48 877 418	48 877 567	48 878 014	48 878 163
50-160/752 PDB(X)	48 877 419	48 877 568	48 878 015	48 878 164
50-160/1102 PDB(X)	48 877 420	48 877 569	48 878 016	48 878 165
50-160/1502 PDB(X)	48 877 421	48 877 570	48 878 017	48 878 166
50-160/1852 PDB(X)	48 877 422	48 877 571	48 878 018	48 878 167
50-160/2202 PDB(X)	48 877 423	48 877 572	48 878 019	48 878 168
50-160/3002 PDB(X)				
50-250/1502 PDB(X)	48 877 424	48 877 573	48 878 020	48 878 169
50-250/1852 PDB(X)	48 877 425	48 877 574	48 878 021	48 878 170
50-250/2202 PDB(X)	48 877 426	48 877 575	48 878 022	48 878 171
50-250/3002 PDB(X)				
65-160/752 PDB(X)	48 877 427	48 877 576	48 878 023	48 878 172
65-160/1102 PDB(X)	48 877 428	48 877 577	48 878 024	48 878 173
65-160/1502 PDB(X)	48 877 429	48 877 578	48 878 025	48 878 174
65-160/1852 PDB(X)	48 877 430	48 877 579	48 878 026	48 878 175
65-160/2202 PDB(X)	48 877 431	48 877 580	48 878 027	48 878 176
65-160/3002 PDB(X)				
65-160/3702 PDB(X)				
65-250/1852 PDB(X)				
65-250/2202 PDB(X)				
65-250/3002 PDB(X)				
65-250/3702 PDB(X)				
80-160/752 PDB(X)	48 877 432	48 877 581	48 878 028	48 878 177
80-160/1102 PDB(X)	48 877 433	48 877 582	48 878 029	48 878 178
80-160/1502 PDB(X)	48 877 434	48 877 583	48 878 030	48 878 179
80-160/1852 PDB(X)	48 877 435	48 877 584	48 878 031	48 878 180
80-160/2202 PDB(X)	48 877 436	48 877 585	48 878 032	48 878 181
80-160/3002 PDB(X)				
80-160/3702 PDB(X)				
80-210/1852 PDB(X)				
80-210/2202 PDB(X)				
80-210/3002 PDB(X)				
80-210/3702 PDB(X)				
80-250/3002 PDB(X)				
80-250/3702 PDB(X)				
80-250/4502 PDB(X)				

2-pole Models

Etaline PumpDrive Basic	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
100-125/552 PDB(X)	48 877 437	48 877 586	48 878 033	48 878 182
100-125/752 PDB(X)	48 877 438	48 877 587	48 878 034	48 878 183
100-125/1102 PDB(X)	48 877 439	48 877 588	48 878 035	48 878 184
100-125/1502 PDB(X)	48 877 440	48 877 589	48 878 036	48 878 185
100-125/1852 PDB(X)	48 877 441	48 877 590	48 878 037	48 878 186
100-125/2202 PDB(X)	48 877 442	48 877 591	48 878 038	48 878 187
100-160/752 PDB(X)	48 877 443	48 877 592	48 878 039	48 878 188
100-160/1102 PDB(X)	48 877 444	48 877 593	48 878 040	48 878 189
100-160/1502 PDB(X)	48 877 445	48 877 594	48 878 041	48 878 190
100-160/1852 PDB(X)	48 877 446	48 877 595	48 878 042	48 878 191
100-160/2202 PDB(X)	48 877 447	48 877 596	48 878 043	48 878 192
100-160/3002 PDB(X)				
100-160/3702 PDB(X)				
100-170/1102 PDB(X)	48 877 448	48 877 597	48 878 044	48 878 193
100-170/1502 PDB(X)	48 877 449	48 877 598	48 878 045	48 878 194
100-170/1852 PDB(X)	48 877 450	48 877 599	48 878 046	48 878 195
100-170/2202 PDB(X)	48 877 451	48 877 600	48 878 047	48 878 196
100-170/3002 PDB(X)				
100-170/3702 PDB(X)				
100-200/3002 PDB(X)				
100-200/3702 PDB(X)				
100-200/4502 PDB(X)				
100-250/4502 PDB(X)				
125-160/2202 PDB(X)				
125-160/3002 PDB(X)				
125-160/3702 PDB(X)				
125-160/4502 PDB(X)				
125-200/3702 PDB(X)				
125-200/4502 PDB(X)				

4-pole Models

Etaline PumpDrive Advanced	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
32-160/054 PDA(X)	48 877 750	48 877 899	48 878 346	48 878 495
32-160/074 PDA(X)	48 877 751	48 877 900	48 878 347	48 878 496
32-160/114 PDA(X)	48 877 752	48 877 901	48 878 348	48 878 497
32-160/154 PDA(X)	48 877 753	48 877 902	48 878 349	48 878 498
32-160/224 PDA(X)				
32-200/114 PDA(X)	48 877 754	48 877 903	48 878 350	48 878 499
32-200/154 PDA(X)	48 877 755	48 877 904	48 878 351	48 878 500
32-200/224 PDA(X)	48 877 756	48 877 905	48 878 352	48 878 501
32-200/304 PDA(X)	48 877 757	48 877 906	48 878 353	48 878 502
32-200/404 PDA(X)				
40-160/054 PDA(X)	48 877 758	48 877 907	48 878 354	48 878 503
40-160/074 PDA(X)	48 877 759	48 877 908	48 878 355	48 878 504
40-160/114 PDA(X)	48 877 760	48 877 909	48 878 356	48 878 505
40-160/154 PDA(X)	48 877 761	48 877 910	48 878 357	48 878 506
40-160/224 PDA(X)				
40-250/224 PDA(X)	48 877 762	48 877 911	48 878 358	48 878 507
40-250/304 PDA(X)	48 877 763	48 877 912	48 878 359	48 878 508
40-250/404 PDA(X)	48 877 764	48 877 913	48 878 360	48 878 509
40-250/554 PDA(X)	48 877 765	48 877 914	48 878 361	48 878 510
40-250/754 PDA(X)	48 877 766	48 877 915	48 878 362	48 878 511
40-250/1104 PDA(X)				
50-160/114 PDA(X)	48 877 767	48 877 916	48 878 363	48 878 512
50-160/154 PDA(X)	48 877 768	48 877 917	48 878 364	48 878 513
50-160/224 PDA(X)	48 877 769	48 877 918	48 878 365	48 878 514
50-160/304 PDA(X)	48 877 770	48 877 919	48 878 366	48 878 515
50-160/404 PDA(X)				
50-250/304 PDA(X)	48 877 771	48 877 920	48 878 367	48 878 516
50-250/404 PDA(X)	48 877 772	48 877 921	48 878 368	48 878 517
50-250/554 PDA(X)	48 877 773	48 877 922	48 878 369	48 878 518
50-250/754 PDA(X)	48 877 774	48 877 923	48 878 370	48 878 519
50-250/1104 PDA(X)	48 877 775	48 877 924	48 878 371	48 878 520
65-160/154 PDA(X)	48 877 776	48 877 925	48 878 372	48 878 521
65-160/224 PDA(X)	48 877 777	48 877 926	48 878 373	48 878 522
65-160/304 PDA(X)	48 877 778	48 877 927	48 878 374	48 878 523
65-160/404 PDA(X)	48 877 779	48 877 928	48 878 375	48 878 524
65-160/554 PDA(X)				
65-250/304 PDA(X)	48 877 780	48 877 929	48 878 376	48 878 525
65-250/404 PDA(X)	48 877 781	48 877 930	48 878 377	48 878 526
65-250/554 PDA(X)	48 877 782	48 877 931	48 878 378	48 878 527
65-250/754 PDA(X)	48 877 783	48 877 932	48 878 379	48 878 528
65-250/1104 PDA(X)	48 877 784	48 877 933	48 878 380	48 878 529
65-250/1504 PDA(X)				
80-160/154 PDA(X)	48 877 785	48 877 934	48 878 381	48 878 530
80-160/224 PDA(X)	48 877 786	48 877 935	48 878 382	48 878 531
80-160/304 PDA(X)	48 877 787	48 877 936	48 878 383	48 878 532
80-160/404 PDA(X)	48 877 788	48 877 937	48 878 384	48 878 533
80-160/554 PDA(X)	48 877 789	48 877 938	48 878 385	48 878 534
80-160/754 PDA(X)				
80-210/404 PDA(X)	48 877 790	48 877 939	48 878 386	48 878 535
80-210/554 PDA(X)	48 877 791	48 877 940	48 878 387	48 878 536
80-210/754 PDA(X)	48 877 792	48 877 941	48 878 388	48 878 537
80-210/1104 PDA(X)	48 877 793	48 877 942	48 878 389	48 878 538
80-210/1504 PDA(X)				

4-pole Models

Etaline PumpDrive Advanced	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
80-250/554 PDA(X)	48 877 794	48 877 943	48 878 390	48 878 539
80-250/754 PDA(X)	48 877 795	48 877 944	48 878 391	48 878 540
80-250/1104 PDA(X)	48 877 796	48 877 945	48 878 392	48 878 541
80-250/1504 PDA(X)	48 877 797	48 877 946	48 878 393	48 878 542
80-250/1854 PDA(X)				
80-250/2204 PDA(X)				
100-125/154 PDA(X)	48 877 798	48 877 947	48 878 394	48 878 543
100-125/224 PDA(X)	48 877 799	48 877 948	48 878 395	48 878 544
100-125/304 PDA(X)	48 877 800	48 877 949	48 878 396	48 878 545
100-125/404 PDA(X)				
100-160/154 PDA(X)	48 877 801	48 877 950	48 878 397	48 878 546
100-160/224 PDA(X)	48 877 802	48 877 951	48 878 398	48 878 547
100-160/304 PDA(X)	48 877 803	48 877 952	48 878 399	48 878 548
100-160/404 PDA(X)	48 877 804	48 877 953	48 878 400	48 878 549
100-160/554 PDA(X)	48 877 805	48 877 954	48 878 401	48 878 550
100-160/754 PDA(X)	48 877 806	48 877 955	48 878 402	48 878 551
100-170/224 PDA(X)	48 877 807	48 877 956	48 878 403	48 878 552
100-170/304 PDA(X)	48 877 808	48 877 957	48 878 404	48 878 553
100-170/404 PDA(X)	48 877 809	48 877 958	48 878 405	48 878 554
100-170/554 PDA(X)	48 877 810	48 877 959	48 878 406	48 878 555
100-170/754 PDA(X)	48 877 811	48 877 960	48 878 407	48 878 556
100-170/1104 PDA(X)	48 877 812	48 877 961	48 878 408	48 878 557
100-200/404 PDA(X)	48 877 813	48 877 962	48 878 409	48 878 558
100-200/554 PDA(X)	48 877 814	48 877 963	48 878 410	48 878 559
100-200/754 PDA(X)	48 877 815	48 877 964	48 878 411	48 878 560
100-200/1104 PDA(X)	48 877 816	48 877 965	48 878 412	48 878 561
100-200/1504 PDA(X)	48 877 817	48 877 966	48 878 413	48 878 562
100-200/1854 PDA(X)	48 877 818	48 877 967	48 878 414	48 878 563
100-200/2204 PDA(X)				
100-250/754 PDA(X)	48 877 819	48 877 968	48 878 415	48 878 564
100-250/1104 PDA(X)	48 877 820	48 877 969	48 878 416	48 878 565
100-250/1504 PDA(X)	48 877 821	48 877 970	48 878 417	48 878 566
100-250/1854 PDA(X)	48 877 822	48 877 971	48 878 418	48 878 567
100-250/2204 PDA(X)	48 877 823	48 877 972	48 878 419	48 878 568
100-250/3004 PDA(X)				
100-250/3704 PDA(X)				
125-160/404 PDA(X)	48 877 824	48 877 973	48 878 420	48 878 569
125-160/554 PDA(X)	48 877 825	48 877 974	48 878 421	48 878 570
125-160/754 PDA(X)	48 877 826	48 877 975	48 878 422	48 878 571
125-160/1104 PDA(X)	48 877 827	48 877 976	48 878 423	48 878 572
125-160/1504 PDA(X)				
125-200/554 PDA(X)	48 877 828	48 877 977	48 878 424	48 878 573
125-200/754 PDA(X)	48 877 829	48 877 978	48 878 425	48 878 574
125-200/1104 PDA(X)	48 877 830	48 877 979	48 878 426	48 878 575
125-200/1504 PDA(X)	48 877 831	48 877 980	48 878 427	48 878 576
125-200/1854 PDA(X)	48 877 832	48 877 981	48 878 428	48 878 577
125-200/2204 PDA(X)	48 877 833	48 877 982	48 878 429	48 878 578
125-200/3004 PDA(X)				
125-250/754 PDA(X)	48 877 834	48 877 983	48 878 430	48 878 579
125-250/1104 PDA(X)	48 877 835	48 877 984	48 878 431	48 878 580
125-250/1504 PDA(X)	48 877 836	48 877 985	48 878 432	48 878 581
125-250/1854 PDA(X)	48 877 837	48 877 986	48 878 433	48 878 582
125-250/2204 PDA(X)	48 877 838	48 877 987	48 878 434	48 878 583
125-250/3004 PDA(X)				
125-250/3704 PDA(X)				
125-250/4504 PDA(X)				

4-pole Models

Etaline PumpDrive Advanced	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
150-200/754 PDA(X)	48 877 839	48 877 988	48 878 435	48 878 584
150-200/1104 PDA(X)	48 877 840	48 877 989	48 878 436	48 878 585
150-200/1504 PDA(X)	48 877 841	48 877 990	48 878 437	48 878 586
150-200/1854 PDA(X)	48 877 842	48 877 991	48 878 438	48 878 587
150-200/2204 PDA(X)	48 877 843	48 877 992	48 878 439	48 878 588
150-200/3004 PDA(X)				
150-200/3704 PDA(X)				
150-200/4504 PDA(X)				
150-250/1104 PDA(X)	48 877 844	48 877 993	48 878 440	48 878 589
150-250/1504 PDA(X)	48 877 845	48 877 994	48 878 441	48 878 590
150-250/1854 PDA(X)	48 877 846	48 877 995	48 878 442	48 878 591
150-250/2204 PDA(X)	48 877 847	48 877 996	48 878 443	48 878 592
150-250/3004 PDA(X)				
150-250/3704 PDA(X)				
150-250/4504 PDA(X)				
200-250/1854 PDA(X)				
200-250/2204 PDA(X)				
200-250/3004 PDA(X)				
200-250/3704 PDA(X)				
200-250/4504 PDA(X)				
200-315/3004 PDA(X)				
200-315/3704 PDA(X)				
200-315/4504 PDA(X)				

4-pole Models

Etaline PumpDrive Basic	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
32-160/054 PDB(X)	48 877 452	48 877 601	48 878 048	48 878 197
32-160/074 PDB(X)	48 877 453	48 877 602	48 878 049	48 878 198
32-160/114 PDB(X)	48 877 454	48 877 603	48 878 050	48 878 199
32-160/154 PDB(X)	48 877 455	48 877 604	48 878 051	48 878 200
32-160/224 PDB(X)				
32-200/114 PDB(X)	48 877 456	48 877 605	48 878 052	48 878 201
32-200/154 PDB(X)	48 877 457	48 877 606	48 878 053	48 878 202
32-200/224 PDB(X)	48 877 458	48 877 607	48 878 054	48 878 203
32-200/304 PDB(X)	48 877 459	48 877 608	48 878 055	48 878 204
32-200/404 PDB(X)				
40-160/054 PDB(X)	48 877 460	48 877 609	48 878 056	48 878 205
40-160/074 PDB(X)	48 877 461	48 877 610	48 878 057	48 878 206
40-160/114 PDB(X)	48 877 462	48 877 611	48 878 058	48 878 207
40-160/154 PDB(X)	48 877 463	48 877 612	48 878 059	48 878 208
40-160/224 PDB(X)				
40-250/224 PDB(X)	48 877 464	48 877 613	48 878 060	48 878 209
40-250/304 PDB(X)	48 877 465	48 877 614	48 878 061	48 878 210
40-250/404 PDB(X)	48 877 466	48 877 615	48 878 062	48 878 211
40-250/554 PDB(X)	48 877 467	48 877 616	48 878 063	48 878 212
40-250/754 PDB(X)	48 877 468	48 877 617	48 878 064	48 878 213
40-250/1104 PDB(X)				
50-160/114 PDB(X)	48 877 469	48 877 618	48 878 065	48 878 214
50-160/154 PDB(X)	48 877 470	48 877 619	48 878 066	48 878 215
50-160/224 PDB(X)	48 877 471	48 877 620	48 878 067	48 878 216
50-160/304 PDB(X)	48 877 472	48 877 621	48 878 068	48 878 217
50-160/404 PDB(X)				
50-250/304 PDB(X)	48 877 473	48 877 622	48 878 069	48 878 218
50-250/404 PDB(X)	48 877 474	48 877 623	48 878 070	48 878 219
50-250/554 PDB(X)	48 877 475	48 877 624	48 878 071	48 878 220
50-250/754 PDB(X)	48 877 476	48 877 625	48 878 072	48 878 221
50-250/1104 PDB(X)	48 877 477	48 877 626	48 878 073	48 878 222
65-160/154 PDB(X)	48 877 478	48 877 627	48 878 074	48 878 223
65-160/224 PDB(X)	48 877 479	48 877 628	48 878 075	48 878 224
65-160/304 PDB(X)	48 877 480	48 877 629	48 878 076	48 878 225
65-160/404 PDB(X)	48 877 481	48 877 630	48 878 077	48 878 226
65-160/554 PDB(X)				
65-250/304 PDB(X)	48 877 482	48 877 631	48 878 078	48 878 227
65-250/404 PDB(X)	48 877 483	48 877 632	48 878 079	48 878 228
65-250/554 PDB(X)	48 877 484	48 877 633	48 878 080	48 878 229
65-250/754 PDB(X)	48 877 485	48 877 634	48 878 081	48 878 230
65-250/1104 PDB(X)	48 877 486	48 877 635	48 878 082	48 878 231
65-250/1504 PDB(X)				
80-160/154 PDB(X)	48 877 487	48 877 636	48 878 083	48 878 232
80-160/224 PDB(X)	48 877 488	48 877 637	48 878 084	48 878 233
80-160/304 PDB(X)	48 877 489	48 877 638	48 878 085	48 878 234
80-160/404 PDB(X)	48 877 490	48 877 639	48 878 086	48 878 235
80-160/554 PDB(X)	48 877 491	48 877 640	48 878 087	48 878 236
80-160/754 PDB(X)				
80-210/404 PDB(X)	48 877 492	48 877 641	48 878 088	48 878 237
80-210/554 PDB(X)	48 877 493	48 877 642	48 878 089	48 878 238
80-210/754 PDB(X)	48 877 494	48 877 643	48 878 090	48 878 239
80-210/1104 PDB(X)	48 877 495	48 877 644	48 878 091	48 878 240
80-210/1504 PDB(X)				

4-pole Models

Etaline PumpDrive Basic	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
80-250/554 PDB(X)	48 877 496	48 877 645	48 878 092	48 878 241
80-250/754 PDB(X)	48 877 497	48 877 646	48 878 093	48 878 242
80-250/1104 PDB(X)	48 877 498	48 877 647	48 878 094	48 878 243
80-250/1504 PDB(X)	48 877 499	48 877 648	48 878 095	48 878 244
80-250/1854 PDB(X)				
80-250/2204 PDB(X)				
100-125/154 PDB(X)	48 877 500	48 877 649	48 878 096	48 878 245
100-125/224 PDB(X)	48 877 501	48 877 650	48 878 097	48 878 246
100-125/304 PDB(X)	48 877 502	48 877 651	48 878 098	48 878 247
100-125/404 PDB(X)				
100-160/154 PDB(X)	48 877 503	48 877 652	48 878 099	48 878 248
100-160/224 PDB(X)	48 877 504	48 877 653	48 878 100	48 878 249
100-160/304 PDB(X)	48 877 505	48 877 654	48 878 101	48 878 250
100-160/404 PDB(X)	48 877 506	48 877 655	48 878 102	48 878 251
100-160/554 PDB(X)	48 877 507	48 877 656	48 878 103	48 878 252
100-160/754 PDB(X)	48 877 508	48 877 657	48 878 104	48 878 253
100-170/224 PDB(X)	48 877 509	48 877 658	48 878 105	48 878 254
100-170/304 PDB(X)	48 877 510	48 877 659	48 878 106	48 878 255
100-170/404 PDB(X)	48 877 511	48 877 660	48 878 107	48 878 256
100-170/554 PDB(X)	48 877 512	48 877 661	48 878 108	48 878 257
100-170/754 PDB(X)	48 877 513	48 877 662	48 878 109	48 878 258
100-170/1104 PDB(X)	48 877 514	48 877 663	48 878 110	48 878 259
100-200/404 PDB(X)	48 877 515	48 877 664	48 878 111	48 878 260
100-200/554 PDB(X)	48 877 516	48 877 665	48 878 112	48 878 261
100-200/754 PDB(X)	48 877 517	48 877 666	48 878 113	48 878 262
100-200/1104 PDB(X)	48 877 518	48 877 667	48 878 114	48 878 263
100-200/1504 PDB(X)	48 877 519	48 877 668	48 878 115	48 878 264
100-200/1854 PDB(X)	48 877 520	48 877 669	48 878 116	48 878 265
100-200/2204 PDB(X)				
100-250/754 PDB(X)	48 877 521	48 877 670	48 878 117	48 878 266
100-250/1104 PDB(X)	48 877 522	48 877 671	48 878 118	48 878 267
100-250/1504 PDB(X)	48 877 523	48 877 672	48 878 119	48 878 268
100-250/1854 PDB(X)	48 877 524	48 877 673	48 878 120	48 878 269
100-250/2204 PDB(X)	48 877 525	48 877 674	48 878 121	48 878 270
100-250/3004 PDB(X)				
100-250/3704 PDB(X)				
125-160/404 PDB(X)	48 877 526	48 877 675	48 878 122	48 878 271
125-160/554 PDB(X)	48 877 527	48 877 676	48 878 123	48 878 272
125-160/754 PDB(X)	48 877 528	48 877 677	48 878 124	48 878 273
125-160/1104 PDB(X)	48 877 529	48 877 678	48 878 125	48 878 274
125-160/1504 PDB(X)				
125-200/554 PDB(X)	48 877 530	48 877 679	48 878 126	48 878 275
125-200/754 PDB(X)	48 877 531	48 877 680	48 878 127	48 878 276
125-200/1104 PDB(X)	48 877 532	48 877 681	48 878 128	48 878 277
125-200/1504 PDB(X)	48 877 533	48 877 682	48 878 129	48 878 278
125-200/1854 PDB(X)	48 877 534	48 877 683	48 878 130	48 878 279
125-200/2204 PDB(X)	48 877 535	48 877 684	48 878 131	48 878 280
125-200/3004 PDB(X)				
125-250/754 PDB(X)	48 877 536	48 877 685	48 878 132	48 878 281
125-250/1104 PDB(X)	48 877 537	48 877 686	48 878 133	48 878 282
125-250/1504 PDB(X)	48 877 538	48 877 687	48 878 134	48 878 283
125-250/1854 PDB(X)	48 877 539	48 877 688	48 878 135	48 878 284
125-250/2204 PDB(X)	48 877 540	48 877 689	48 878 136	48 878 285
125-250/3004 PDB(X)				
125-250/3704 PDB(X)				
125-250/4504 PDB(X)				

4-pole Models

Etaline PumpDrive Basic	Design			
	GN 6		GN 11	
	without diff. pressure sensor	with diff. pressure sensor (X)	without diff. pressure sensor	with diff. pressure sensor (X)
150-200/754 PDB(X)	48 877 541	48 877 690	48 878 137	48 878 286
150-200/1104 PDB(X)	48 877 542	48 877 691	48 878 138	48 878 287
150-200/1504 PDB(X)	48 877 543	48 877 692	48 878 139	48 878 288
150-200/1854 PDB(X)	48 877 544	48 877 693	48 878 140	48 878 289
150-200/2204 PDB(X)	48 877 545	48 877 694	48 878 141	48 878 290
150-200/3004 PDB(X)				
150-200/3704 PDB(X)				
150-200/4504 PDB(X)				
150-250/1104 PDB(X)	48 877 546	48 877 695	48 878 142	48 878 291
150-250/1504 PDB(X)	48 877 547	48 877 696	48 878 143	48 878 292
150-250/1854 PDB(X)	48 877 548	48 877 697	48 878 144	48 878 293
150-250/2204 PDB(X)	48 877 549	48 877 698	48 878 145	48 878 294
150-250/3004 PDB(X)				
150-250/3704 PDB(X)				
150-250/4504 PDB(X)				
200-250/1854 PDB(X)				
200-250/2204 PDB(X)				
200-250/3004 PDB(X)				
200-250/3704 PDB(X)				
200-250/4504 PDB(X)				
200-315/3004 PDB(X)				
200-315/3704 PDB(X)				
200-315/4504 PDB(X)				

Accessories and Optional Equipment

		≈ kg
Pump foot including mounting elements for vertical installation		
Etaline Hya-Drive 32-160/... to 100-125/... ¹⁾	47 077 960	2.0
Etaline Hya-Drive 100-170/... to 200-315/... ²⁾	47 086 291	14.0

¹⁾ 3 pump feet

²⁾ 1 pump foot

		≈ kg
LON module	47 106 600	0.2
Control panel Basic	47 106 620	0.2
Control panel Advanced	47 106 621	0.2

Accessories and Optional Equipment

Differential pressure sensors

Type DE 30

Output signal 4 - 20 mA / three-wire system

Supply voltage 15 - 30 VDC

Max. working resistance approx. 600 Ohm

Max. ambient temperature 40 °C

Meas. range [bar]	Union / Adapter	Ident. number ¹⁾
0 - 2.5	Rc 3/8	01 060 209
0 - 4.0	Rc 3/8	01 060 210
0 - 6.0	Rc 3/8	01 060 211
0 - 10.0	Rc 3/8	01 076 929
0 - 2.5	Rc 1/2	01 060 212
0 - 4.0	Rc 1/2	01 076 930
0 - 6.0	Rc 1/2	01 076 941
0 - 10.0	Rc 1/2	01 076 942

¹⁾ complete with retaining plate, spiralled pipe sections and adapter

Output filter

In order to meet RFI suppression requirements to DIN 55011, the maximum cable lengths specified in the technical data must be observed. Output filters are required if longer cables are used.

Technical data available on request.

Adapter for mounting on the motor

An adapter is only required if the PumpDrive is to be mounted on the motor.

Size of Siemens Motor	KSB Ident number	
	Type V1 / V15	Type B3
71	47 117 519	47 117 519
80	47 117 520	on request
90	47 117 521	47 117 522
100	47 117 511	47 117 515
112M	47 117 512	47 117 512
132S	47 117 513	47 117 513
160	47 117 514	47 117 514
180M	47 117 516	47 117 516
200L	47 117 517	47 117 517
225M	47 117 518	47 117 518

Line chokes

The line input currents indicated in the project planning information are for orientation only; they refer to drive operation at normal rating. These currents may vary depending on the actual line impedance. In low-impedance mains higher currents may occur.

Note

To limit the line input current, the use of line chokes is recommended for PumpDrives with power ratings up to 45 kW.

In addition, the line chokes serve to reduce mains feedback and to improve the power factor.

The scope of application of DIN EN 6100032 must be heeded.

PumpDrive		Three-phase (3~) line choke: IP 00 enclosure; thermal class F; max. ambient temperature 40 °C							
Size	Power [kW]	Ln [mH]	In [A]	Isat	L [mm]	B [mm]	H [mm]	Weight [kg]	Ident No.
.. 000K55 ..	0.55	2.0	11	1.5 In	150	85	150	3.6	01 093 105
.. 000K75 ..	0.75								
.. 001K10 ..	1.10								
.. 001K50 ..	1.50								
.. 002K20 ..	2.20								
.. 004K00 ..	4.00	1.1	28	1.5 In	180	120	178	8.3	01 093 106
.. 005K50 ..	5.50								
.. 007K50 ..	7.50								
.. 011K00 ..	11.00	0.5	51	1.5 In	180	135	178	10.5	01 093 107
.. 015K00 ..	15.00								
.. 018K50 ..	18.50								
.. 022K00 ..	22.00								
.. 030K00 ..	30.00	0.1	100	1.5 In	180	180	180	10.8	01 093 108
.. 037K00 ..	37.00								
.. 045K00 ..	45.00								

