Pioneering for You

Range Leaflet – Edition 03/2016 – 50 Hz

Wilo-EMU sprinkler pumps

Wilo-EMU sprinkler pumps D..., K... and KM...

Design
Multistage submersible pump in sectional construction with VdS approval for vertical or horizontal installation for supplying sprinkler systems

Type key
Example: **Wilo-EMU KM 1300S-2a + NU 801-2/60**
Hydraulics: **KM 1300S-2a**

KM1300	Basic hydraulics
S	Trimmed impeller
2	Number of hydraulic stages
A	Defined impeller diameter

Motor: **NU 801-2/60**

NU	Submersible motor (NU..., U...)
801	Size (6... = 6"; 8... = 8"; 9... = 10"; 12... = 12"; 15... = 16")
2	Number of poles
60	Package length (cm)

Application
For pumping water without long-fibre and abrasive constituents for supplying sprinkler systems

Technical data
- → Mains connection: 3~400 V/50 Hz
- → Submerged operating mode: S1
- → Max. fluid temperature: 25 °C
- → Max. sand content: 35 g/m³
- → Max. number of starts: 10/h
- → Max. submersion depth: 300 m
- → Protection class: IP 68

Special features/product advantages
- → VdS certified
- → Heavy-duty version made of cast iron or bronze
- → Pressure shroud in corrosion-free and hygienic stainless steel version with rubber bearings for reducing noise and vibration
- → VdS-certified non-return valve available as an accessory

Equipment/function
- → Multistage submersible-motor pump with semi-axial impellers
- → NEMA coupling (depending on type)
- → Three-phase motor for direct or star-delta start
- → Rewindable motors

Description/design
Submersible pump for vertical or horizontal installation in tanks to supply sprinkler systems.

Hydraulics
Multistage submersible-motor pump with semi-axial hydraulics. Housing parts made of EN-GJL with 2K coating or G-CuSn10, impellers made of G-CuSn10. Guide housing with casing wear rings made of special bronze. Pressure connection as flange connection.

Motor
Three-phase motor with rewindable PVC-insulated winding for direct and star-delta starting. Motor shroud made of A2/A4-quality stainless steel or steel/G-CuSn10. Pump

connection up to 8" overall size as NEMA connection, as standardised connection from 10" and larger. Sealing of motor shaft by the use of a mechanical seal made of solid silicon carbide material.

Thrust bearing with rockers for absorption of high axial thrust. Negative axial thrust is absorbed by the counter-thrust bearing. Self-lubricating bearing. NU... series motors are filled with water-glycol mixture as standard. Alternatively, they can be filled with drinking water (T version). U... series motors generally have to be filled with drinking water.

cooling
The motor is cooled by the pumped fluid. The motor must always be immersed when operated. Vertical installation is possible with or without cooling jacket. For horizontal installation, bearing brackets must be used for reinforcement of the unit. An anti-vortex plate or cooling jacket may be used to improve the inlet flow.

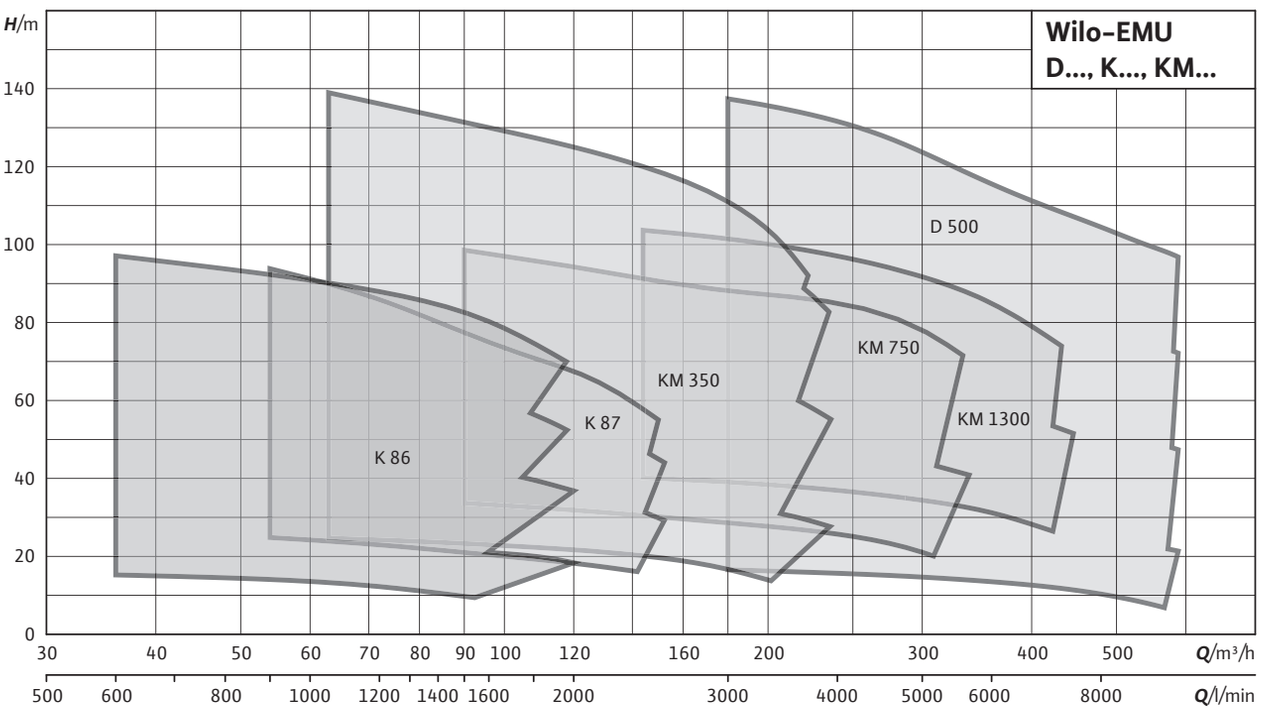
Pressure shroud
The pressure shroud is used for the direct installation of the unit in the pipe system. Standard models are without mounted non-return valves. The maximum inlet pressure is 10 bar or 5 bar on D 500 unit.

Options
→ Standard versions available from stock with 25 m cable (supply availability indicated by "L")

Scope of delivery
→ Hydraulics + motor fully mounted
→ Connecting cable in accordance with VDE/KTW, cable cross-section and length per customer request
→ Installation and operating instructions

Configuration
It is important to observe VdS regulation VdS CEA 4001:2005-09 when installing sprinkler pumps. Please contact VdS for details.

Accessories
→ Pressure shroud
→ Bearing brackets and anti-vortex plate
→ Non-return valve (certified, depending on type)



Sprinkler systems are automatic fire extinguishing systems, which are used for preventative fire protection in special buildings such as skyscrapers, commercial buildings, department stores, industrialinstallations, places of public assembly and underground car parks.

The sprinkler head was invented in 1874 by the American Henry S. Parmalee, a piano maker. Originally, the sprinkler heads were sealed with a small metal plate that was held in place by a device connected to a solder. The solder melts with a corresponding rise in temperature and the holding device releases the small metal plate, which is in turn expelled by the pressure of the water behind it, which then starts spraying.

Several sprinkler heads that are connected to a water pipe system are placed on the ceiling of the room or on the upper part of the side walls. The sprinkler heads are in turn sealed with glass ampoules that are filled with a special dyed fluid. There is a constant water pressure in a sprinkler system that is monitored at the central sprinkler control point. In the event of a fire, the special fluid in the glass ampoules heats up and expands, causing the ampoules to burst. That opens the nozzles and water is released from the sprinkler pipe system. The colour of the special fluid indicates the triggering temperature. This triggering temperature is on average approximately 30 °C above the anticipated room temperature.

The resulting drop in pressure is detected and leads to the opening of special valves and the starting of our sprinkler pumps. Water is immediately pumped at high pressure out of the tanks provided or from a water connection designed for that purpose and into the sprinkler system. The water is expelled from all open water nozzles and extinguishes or minimises the fire.

The dimensions of the pipework and of the water supply are designed in such a way that only enough water for a particular number of water nozzles is available, which is called the effective surface. If more sprinkler heads open than are available within the effective surface, then the amount of water available per sprinkler head drops and the effectiveness of the system is diminished.

Sprinkler systems are therefore chiefly capable of fighting a fire in its initial stages (incipient fire) and not for fighting a fire blazing at great intensity. A fireproof separation must be erected between areas that lack a sprinkler system and ones that have one in order to ensure that a blazing fire originating in an unprotected area is not able to cross over into an area of the building that is protected with a sprinkler system.

What are referred to as dry pipe systems are implemented in areas where there is a risk of frost where the sprinkler pipes could freeze. The pipe system in these installations is filled with compressed air. The installation is not filled with water until a sprinkler head has been triggered.

As is the case with conventional fire detectors, sprinkler control points are generally connected to fire detection systems and trigger a fire alarm when a drop in pressure has been detected. Depending on the programming, these are transmitted to the police, fire department, factory security offices or other offices providing aid.

As a rule, the configuration of sprinkler systems in Germany is in accordance with the VdS Regulation CEA 4001 (VdS Damage Prevention, CEA Comité Européen des Assurances). The American Standard of the NFPA (National Fire Protection Association) – also known in modified or further developed form of the directives as FM (Factory Mutual) Standard – is however increasingly enjoying the favour of international building companies and is as a rule also accepted in the meantime by German government authorisation agencies. The system is configured according to the fire hazard level in the area to be protected by determining the water saturation of the fire source between 2.25 mm/min and 30 mm/min (1 mm/min is equivalent to 1 l/m^2/min), the effective time between 30 and 90 min and of the distance between the sprinkler heads.

Formation

The German insurance industry recognised at an early stage that it is absolutely essential to make risks controllable and insurable in active damage prevention. Already around 100 years ago, they founded the "Sprinkler monitoring agency". During the Third Reich, the association of private fire insurers and the association of public fire insurers were closed. Nevertheless, the sprinkler monitoring agency could continue their work to a large extent up until 1944. After an interruption due to the war, in 1947 it was possible to resume work. In June 1948, the inspection authority was integrated into the newly founded Verband der Sachversicherer e.V. (VdS) (German association of property insurers).

In the following years, the technical VdS departments for fire protection and housebreaking/theft protection were continuously expanded. The fusion of the three German insurance associations: Verband der Sachversicherer e.V., HUK-Verband and Deutscher Transportversicherungsverband to form the Verband der Schadenversicherer e.V. (VDS) in 1995 was only a temporary solution before fusion with the Verband der Lebensversicherer and the Gesamtverband der Deutschen Versichersicherungswirtschaft e.V. (GDV) in 1996. The technical departments of the former association were transformed to the VdS Schadenverhütung GmbH on 1997, whose sole shareholder is GDV.

Today, the VdS Schadenverhütung GmbH – or VdS for short – is a modern company, trusted by all groups involved with safety – insurers, manufacturers, service providers, authorities and consumers. The expertise of VdS is documented by numerous accreditations/notifications.

The fire protection department

The fire protection department is an institution that is recognised worldwide. VdS employees are highly qualified experts who work as accident prevention professionals. VdS has been dedicated to fire protection for nearly one hundred years.

This expert knowledge flows into the development of conclusive overall fire protection and safety technology designs. The safety standard defined together with the customer, which is therefore to be aimed at, results in individual protection at the highest level. In a nutshell, the VdS pursues the following objectives: Personal injuries are prevented, and physical damage and financial losses, including downtimes due to failures and possibly the loss of image which results from this, are minimised.

By participating in national and international regulatory committees, but also by means of their own developed guidelines, etc. in the area of fire extinguishing, fire alarm and smoke extraction systems, VdS has a major influence on fire protection and safety technology worldwide. VdS thus has an international knowledge potential at its disposal which can be used for a wide range of applications.

VdS CEA guidelines for sprinkler systems: Planning and installation

These guidelines contain the requirements and provide recommendations for designing, installation and maintenance of stationary sprinkler systems in buildings and industrial plants. They also define special requirements for sprinkler systems, which are essential for personal protection measures. The requirements and recommendations of these guidelines also apply to every addition, extension, repair, maintenance action or other change to the sprinkler system. These guidelines include the classification of dangers, the type of water supply, the components to be used, the installation and testing of the system, as well as the maintenance and extension of existing systems. Demands are placed on the building and partitions, which are required for sprinkler systems to work properly in accordance with these guidelines.

Source: VdS

General

The purpose of the pumps is to deliver the required flow rates and pressures for the sprinkler systems and nozzles. The pumps may not be used for any other purpose than for fighting fires.

The pressure on the pump pressure side must drop continuously with increasing flow rate, i.e. the pump must have a stable pump curve.

The used electric motors must be able to provide sufficient power for all pump loading conditions from a zero flow rate to the end of the pump curve. The end of the pump curve (Qz/Hz), measured at the pump pressure side, is equivalent to 0.83 times the value which is reached at an NPSH value of 9.5 m.

The pump may not be used as a fixed point for the pipes. The discharge/ascending pipe is to be supported directly after the pump – when installed as a pressure shroud pump directly upstream and downstream of the pump – and connected without tension. The installation instructions are to be observed in particular for compensators.

Arrangements with several pumps

If more than one pump is to be installed for a single water supply source with increased reliability or a double water supply, these pumps must be driven by different power sources.

In all cases, the pumps must have pump curves which are adjusted to each other and must be able to pump simultaneously at all flow rates. If two pumps are installed, every single one must be able to deliver the required flow rate and the required pressure. If three pumps are installed, each pump must be able to deliver at least 50 % of the pumped flow rate and the required pressure.

In the case of several water sources, the sprinkler pumps must be able to be supplied from each individual water tank as desired if they are not separated from one another. In the case of pressure shroud operation, the temperature in the pump compartment must be maintained at a minimum of +4 °C.

Maximum temperature and composition of the pumped fluid

The water temperature of the water supply may not exceed 40 °C. If submersible pumps are used, the water temperature may not exceed 25 °C unless it can be verified that the motor is suitable for temperatures up to 40 °C. The water must be free of fibrous or other suspended matter which could result in the pipes becoming clogged. Salt or brackish water may not constantly be in the sprinkler lines.

Valves and accessories

Shut-off valves are to be installed in the pump lines and a non-return valve in the pressure pipe of the pumps. Water must continuously flow through the pump which ensures that overheating is prevented during operation against closed shut-off valves. If the water is fed back into the tank and if the flow rate is not more than 2 % of the approved flow rate, the flow volume does not have to be taken into account in the hydraulic calculation.

Pumping conditionsGeneral

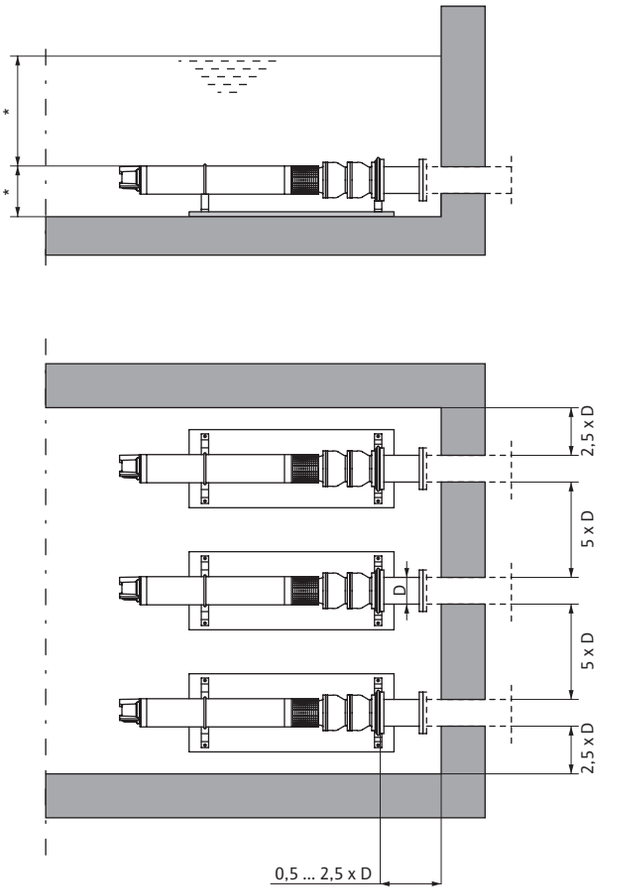
The submersible pump must always be covered by water, or the water must be able to flow freely to the pump. Even when using it as a pressure shroud pump, the water must have the appropriate primary pressure.

Installation conditions

The submersible pump is to be placed in the tank according to the figure. The conditions in accordance with Fig. 8.02 in the design and installation documentation of the VdS [VdS CEA 001:2005-09 (02)] apply to supply lines for dry-installed pressure shroud pumps.

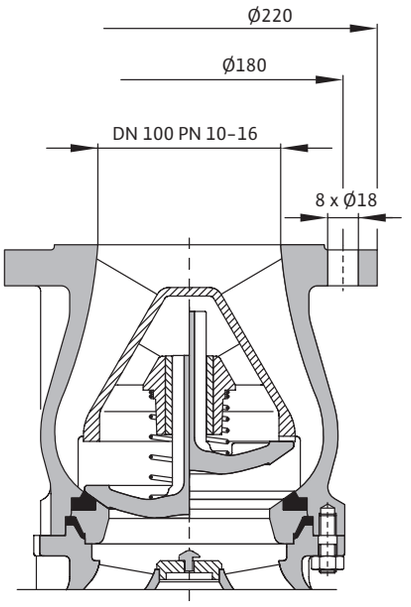
Source: VdS CEA 4001:2005-09 (02) Sprinkler systems, design and installation

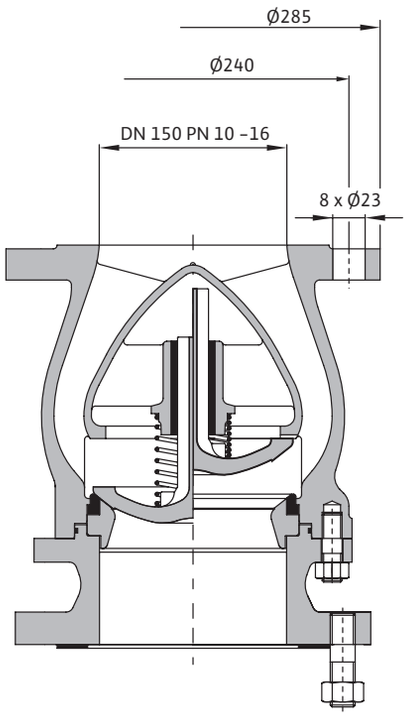
Note: This text is an excerpt from the VdS guideline VdS CEA 4001:2005-09. We would like to thank VdS for being able to publish this part of the guideline. Further information about design and installing sprinkler pumps can be found in the guideline. It is available from VdS.

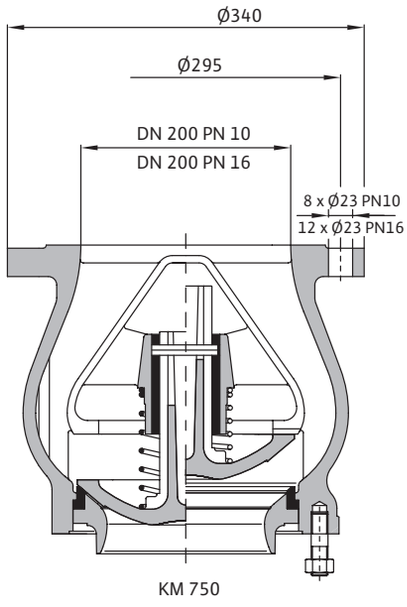


* depending on the relevant pump type

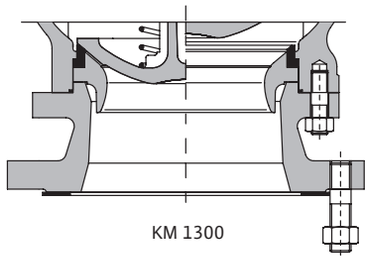
Non-return valves (certified)







KM 750



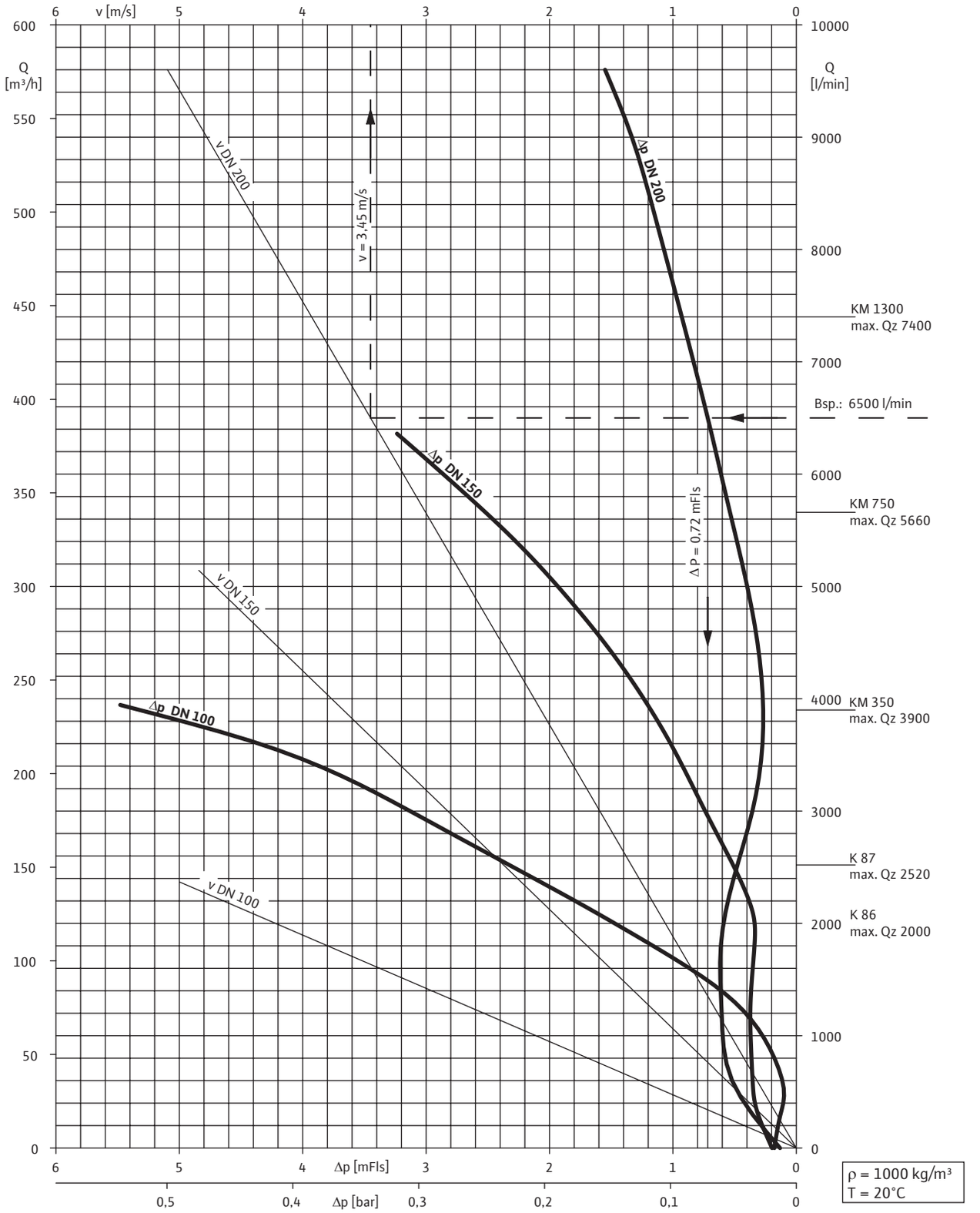
KM 1300

Maße

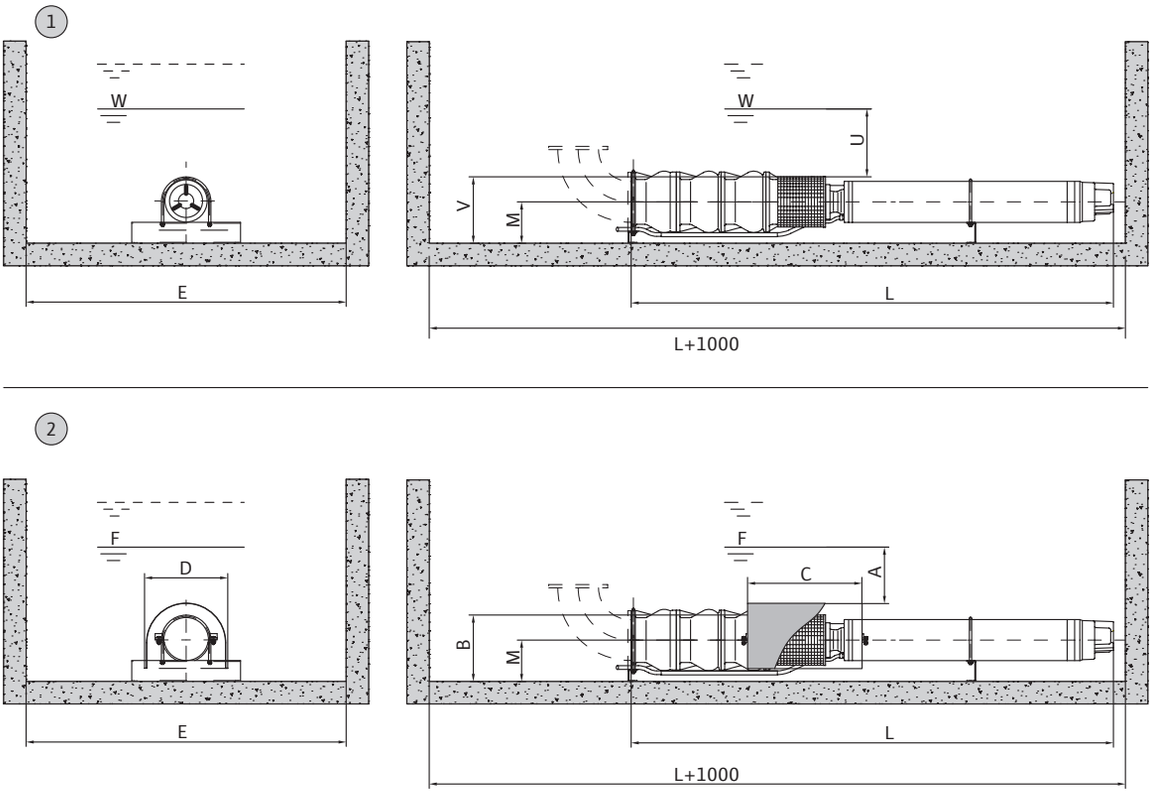
Wilo-EMU...	Length	Weight	Volume flow at 5 m/s	Pressure losses	Friction coefficient	Equivalent pipe length (steel)
	mm	kg	Q l/min	m	ζ	m
K 86...	70	5.3	2370	2,05 (DN 100, 5 m/s)	1,61 (DN 100, 5 m/s)	10 (114x3,2)
K 87...	70	5.3	2370	2,05 (DN 100, 5 m/s)	1,61 (DN 100, 5 m/s)	10 (114x3,2)
KM 350...	320	50.2	5310	2,21 (DN 150, 5 m/s)	1,74 (DN 150, 5 m/s)	16,9 (168,3x4,0)
KM 750...	225	43.3	9420	1,55 (DN 200, 5 m/s)	1,22 (DN 200, 5 m/s)	15,6 (219,1x4,5)
KM 1300...	370	85.6	9420	1,55 (DN 200, 5 m/s)	1,22 (DN 200, 5 m/s)	15,6 (219,1x4,5)
D 500...	–	–	–	–	–	–

The pressure losses of the non-return valves are not included in the individual pump curves. They are to be taken into account in the system curve. Final testing at the factory is performed without the non-return valve attached.

Non-return valves (certified)



Submersion in water



1. – Minimum water submersion without anti-vortex plate
2. – Minimum water submersion with anti-vortex plate

Dimensions

Wilo-EMU...	Type of motor	Dimensions									
		A	*B*	*C*	*D*	*E*	*F*	*M*	*U*	*V*	*W*
		mm									
K 86...	NU 611	150	325	300	370	1000	475	175	400	265	665
K 86...	NU 801	150	350	400	416	1000	500	175	400	265	665
K 87...	NU 611	390	325	300	370	1000	715	175	650	265	915
K 87...	NU 801	390	350	400	416	1000	740	175	650	265	915
KM 350...	NU 801	490	410	500	416	1200	900	230	800	345	1145
KM 350...	NU 911	490	410	600	416	1200	900	230	800	345	1145
KM 750...	NU 801	560	450	500	436	1200	1010	259	900	375	1275
KM 750...	NU 911	560	450	600	436	1200	1010	259	900	375	1275
KM 1300...	NU 801	560	480	600	572	1500	1040	259	1250	395	1645
KM 1300...	NU 911	560	480	800	572	1500	1040	259	1250	395	1645
D 500...	NU 121	1100	545	1000	620	1600	1645	277.5	1300	445	1745
D 500...	NU 160	1100	560	1000	620	1600	1660	277.5	1300	445	1745
D 500...	NU 801	1100	545	700	620	1600	1645	277.5	1300	445	1745
D 500...	NU 911	1100	545	1000	620	1600	1645	277.5	1300	445	1745
D 500...	U 156	1100	560	1000	620	1600	1660	277.5	1300	445	1745

The minimum water level depends on the tank design and the water inflow.
"L" is the length of the unit. See corresponding dimension drawing.

Equipment/function						
Product name	**K 86...**	**K 87...**	**KM 350...**	**KM 750...**	**KM 1300...**	**D 500...**
Design						
Submersible	•	•	•	•	•	•
NEMA connection	•	•	–	–	–	–
Standardised connection	–	–	•	•	•	•
Integrated non-return valve	–	–	–	–	–	–
Without non-return valve	•	•	•	•	•	•
AC motor	–	–	–	–	–	–
Three-phase motor	•	•	•	•	•	•
Direct activation	•	•	•	•	•	•
Star-delta activation	•	•	•	•	•	•
FC operation	–	–	–	–	–	–
Motor with cast stator	–	–	–	–	–	–
Rewindable motor	•	•	•	•	•	•
Oil motor filling	–	–	–	–	–	–
Water-glycol motor filling	•	•	•	•	•	•
Drinking water motor filling	optional	optional	optional	optional	optional	optional
Hydraulics/motor preassembled	•	•	•	•	•	•
Application						
Horizontal installation	•	•	•	•	•	•
Vertical installation	•	•	•	•	•	•
Equipment/function						
Motor temperature monitoring, PT100	–	–	–	–	–	–
PTC motor temperature monitoring	–	–	–	–	–	–
Dry-running protection	–	–	–	–	–	–
Accessories						
Bearing brackets for horizontal installation	optional	optional	optional	optional	optional	optional
Cooling jacket	optional	optional	optional	optional	optional	optional
Non-return valve	optional	optional	optional	optional	optional	optional
Pressure shroud	optional	optional	optional	optional	optional	optional

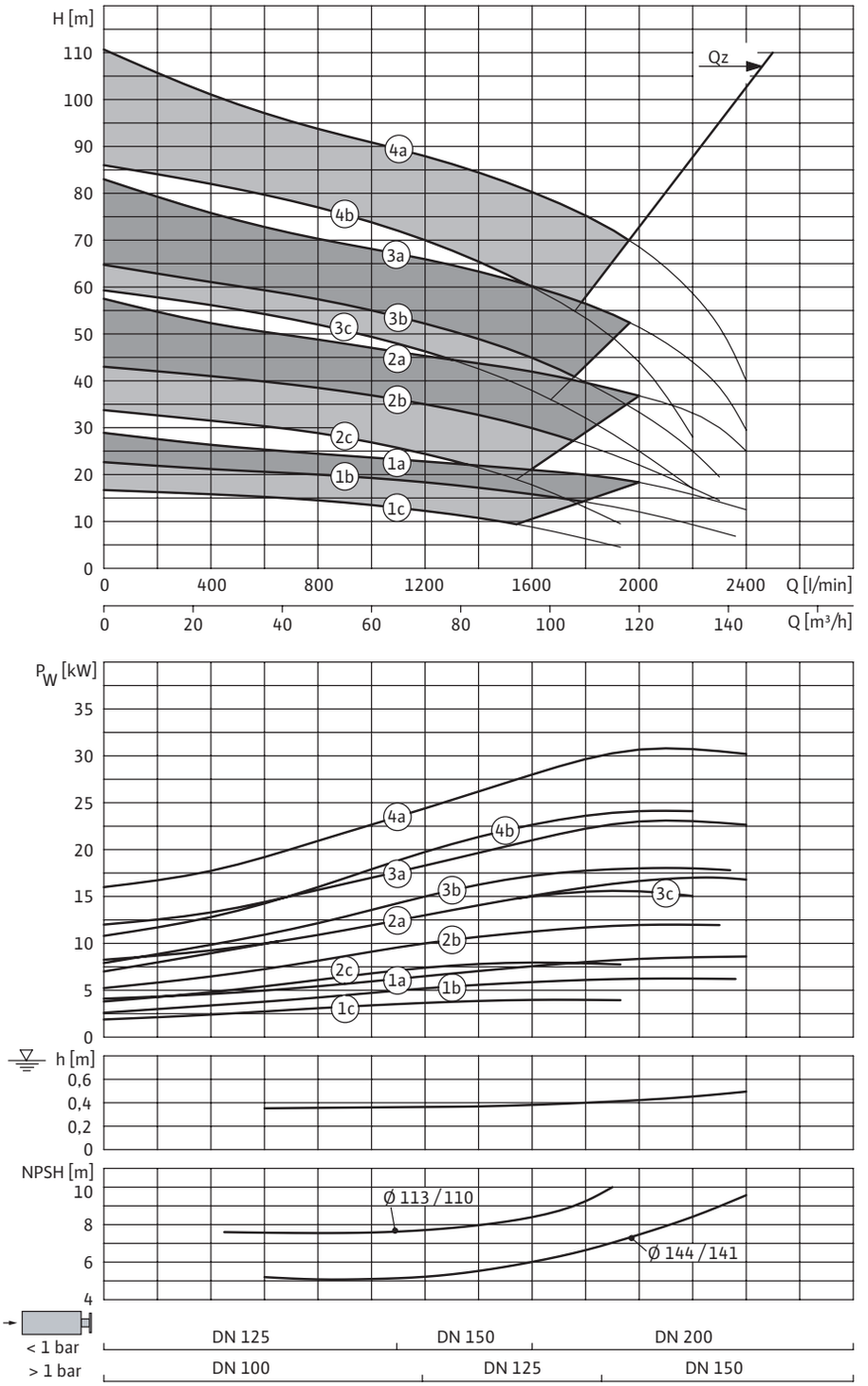
Motor data							
Type of motor	Mains connection	Fluid temperature	Operating mode (immersed)	Protection class	Max. immersion depth	Max. switching frequency	Permitted voltage tolerance
		T °C			m	1/h	%
NU 611...	3~400 V, 50 Hz	+3...+25	S1	IP 68	100	20	±5
NU 801...	3~400 V, 50 Hz	+3...+25	S1	IP 68	300	10	±5
NU 911...	3~400 V, 50 Hz	+3...+25	S1	IP 68	300	10	±5
NU 12...	3~400 V, 50 Hz	+3...+25	S1	IP 68	300	10	±5
NU 160...	3~400 V, 50 Hz	+3...+25	S1	IP 68	300	5	±5
U 156...	3~400 V, 50 Hz	+3...+25	S1	IP 68	300	5	±5

Motor materials								
Type of motor	Motor shaft	Motor shaft (special version)	Motor housing	Motor housing (special version)	Motor shroud	Motor shroud (special version)	Screwed connection, motor	Screwed connection, motor (special version)
NU 611...	1.4301	1.4462	1.4301	1.4571	1.4306	1.4541	A2	A4
NU 801...	1.4021	1.4462	EN-GJL	G-CuSn10	1.4301	1.4571	A2	A4
NU 911...	1.4057	1.4462	EN-GJL	G-CuSn10	1.4301	1.4571	A2	A4
NU 12...	1.4462	1.4462	EN-GJL	G-CuSn10	1.0308	G-CuSn10	A2	A4
NU 160...	1.4057	1.4462	EN-GJL	G-CuSn10	1.0553	G-CuSn10	A2	A4
U 156...	1.4057	1.4462	EN-GJL	G-CuSn10	1.0553	G-CuSn10	A2	A4

Materials, hydraulics								
Wilo-EMU...	Impeller	Impeller (special version)	Pump shaft	Pump shaft (special version)	Pump housing	Pump housing (special version)	Screwed connection, pump	Screwed connection, pump (special version)
K 86...	G-CuSn10	G-CuSn10	1.4021 [AISI420]	1.4122	EN-GJL	G-CuSn10	A2	A2
K 87...	G-CuSn10	G-CuSn10	1.4021 [AISI420]	1.4122	EN-GJL	G-CuSn10	A2	A2
KM 350...	NiAl-Bz	NiAl-Bz	1.4021 [AISI420]	1.4122	EN-GJL	G-CuSn10	A2	A2
KM 750...	NiAl-Bz	NiAl-Bz	1.4021 [AISI420]	1.4122	EN-GJL	G-CuSn10	A2	A2
KM 1300...	G-CuSn10	NiAl-Bz	1.4021 [AISI420]	1.4122	EN-GJL	G-CuSn10	A2	A2
D 500...	NiAl-Bz	NiAl-Bz	1.4021 [AISI420]	1.4122	EN-GJL	G-CuSn10	A2	A2

Certification and emergency operation properties						
Wilo-EMU...	Sprinkler approval for			Running time	Emergency flow rate without pressure shroud	Emergency flow rate with pressure shroud
	Germany (VdS)	*Czech Republic*	*Hungary*	h	%	
K 86...	P 4840420	c.216/C5A/2013/0008	618/4-9/2006	max. 48	min. 2.00	min. 4.00
K 87...	P 4840421	c.216/C5A/2013/0008	618/4-10/2006	max. 48	min. 2.00	min. 4.00
KM 350...	P 4840422	c.216/C5A/2013/0009	618/4-21/2006	max. 48	min. 2.00	min. 4.00
KM 750...	P 4840423	c.216/C5A/2013/0009	618/4-17/2006	max. 48	min. 2.00	min. 4.00
KM 1300...	P 4840424	c.216/C5A/2013/0009	618/4-19/2006	max. 48	min. 2.00	min. 4.00
D 500...	P 4080003	–	–	max. 48	min. 2.00	min. 4.00

Overview pump curve Wilo-EMU K 86



4a = K 86S-4a + NU 801-2/45
4b = K 86S-4b + NU 801-2/40

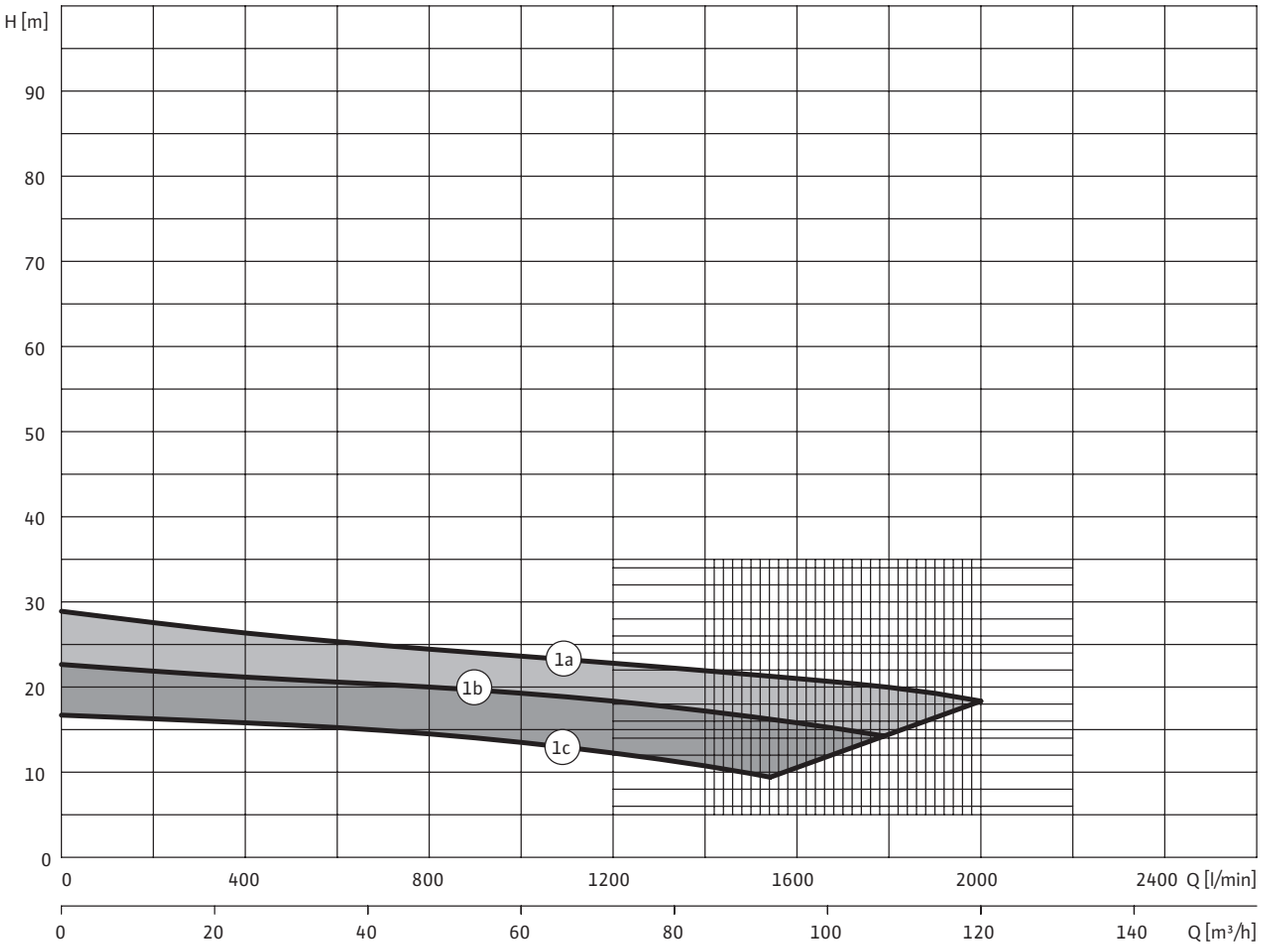
3a = K 86S-3a + NU 801-2/35
3b = K 86S-3b + NU 801-2/28
3c = K 86S-3c + NU 611-2/18

2a = K 86-2a + NU 611-2/18
2b = K 86S-2b + NU 611-2/15
2c = K 86S-2c + NU 611-2/11

1a = K 86-1a + NU 611-2/11
1b = K 86S-1b + NU 611-2/7
1c = K 86S-1c + NU 611-2/5

3~400 V, 50 Hz, p = 1 kg/dm³, v = 1x10⁻⁶ m²/s, ISO 9906 Annex A

Pump curves Wilo-EMU K 86-1

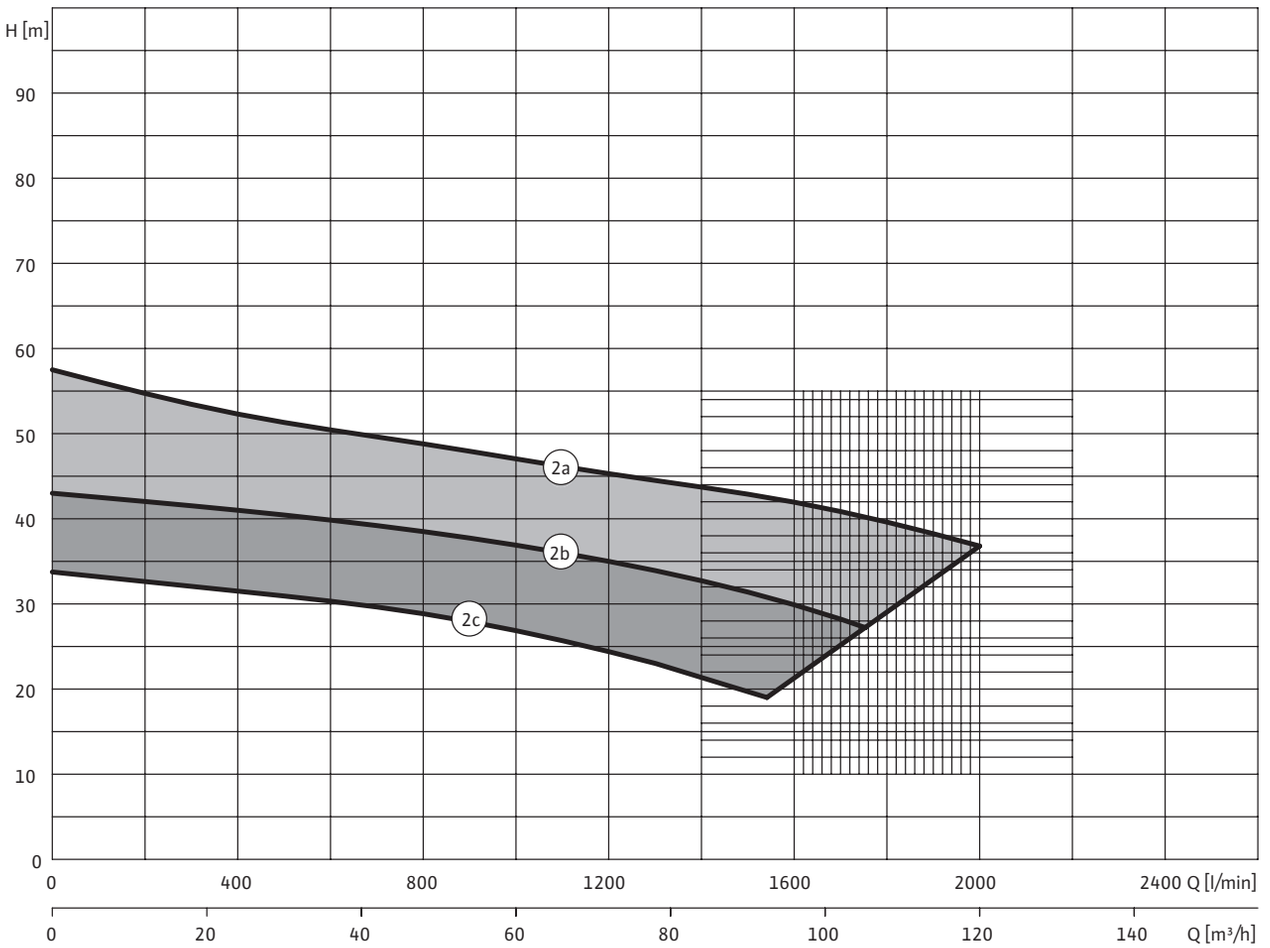


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 86-1a	NU 611-2/11	9	20.5	121	40.5	V+H	•	•
K 86S-1b	NU 611-2/7	7.5	16.8	82	27.5	V+H	•	•
K 86S-1c	NU 611-2/5	5	11.7	57	19	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU K 86-2

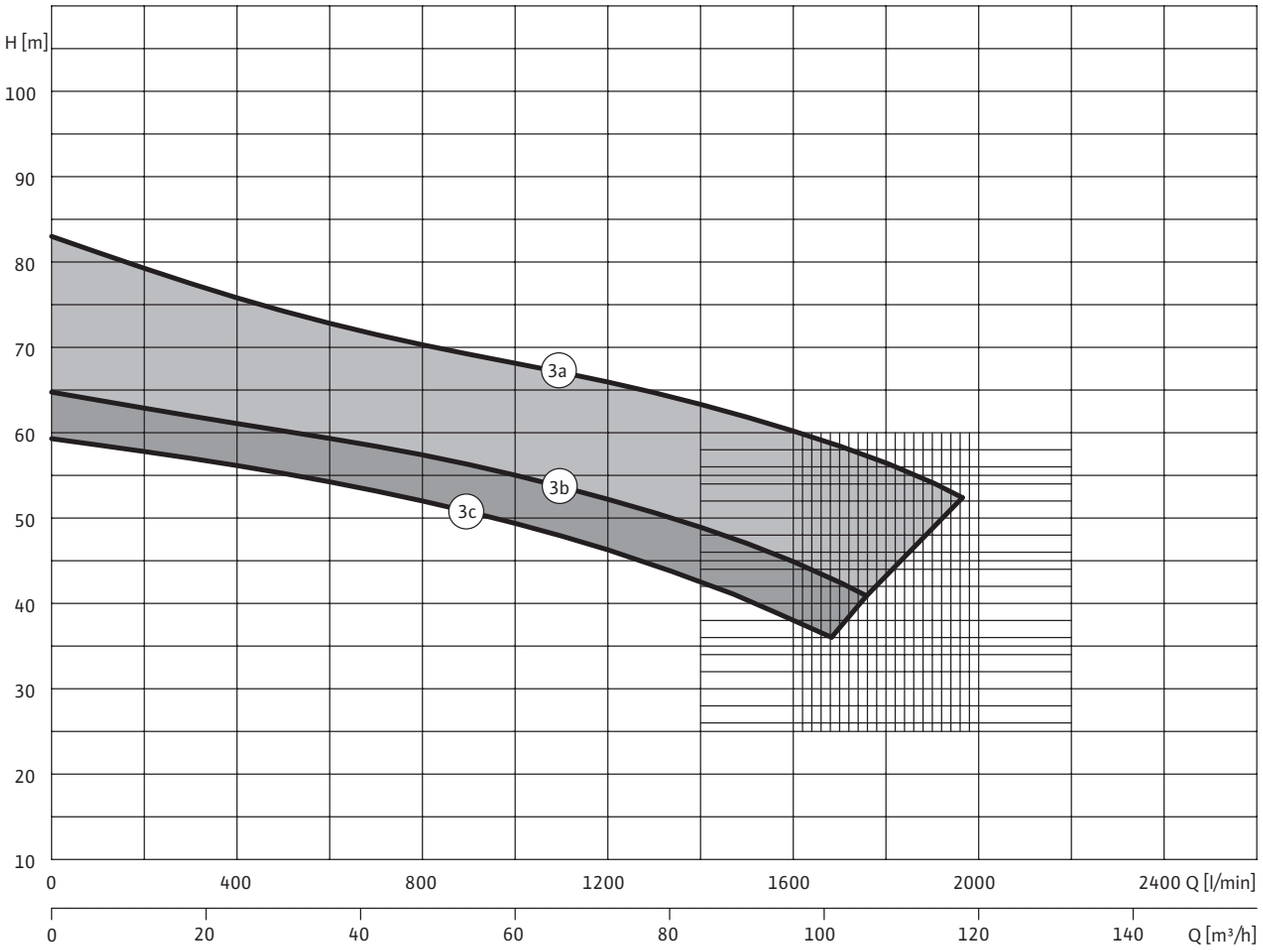


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 86-2a	NU 611-2/18	18	39	205	69	V+H	•	•
K 86S-2b	NU 611-2/15	14	30.5	160	54	V+H	•	•
K 86S-2c	NU 611-2/11	10	22	121	40.5	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU K 86-3

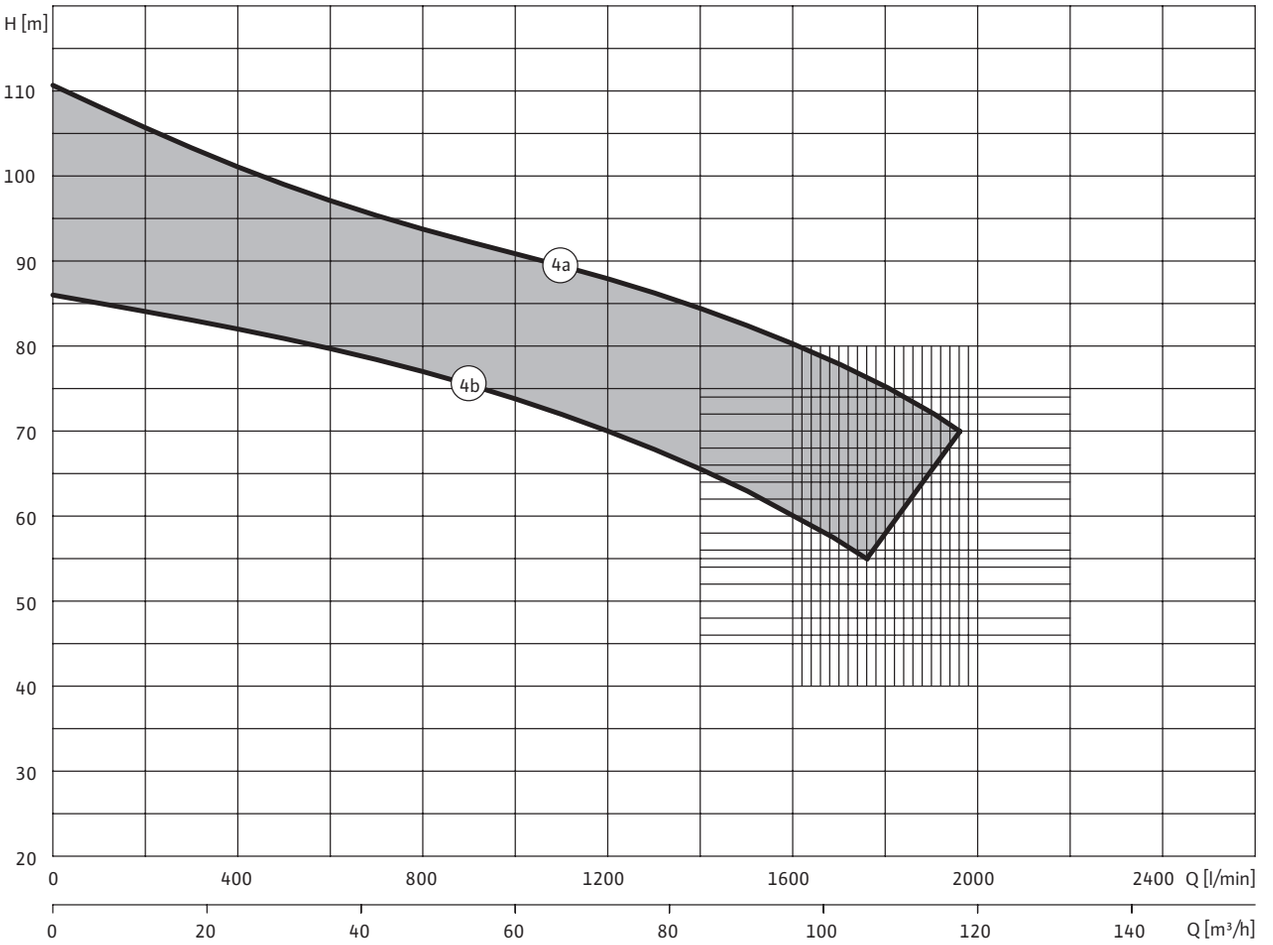


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 86S-3a	NU 801-2/35	26	52	270	90	V+H	•	•
K 86S-3b	NU 801-2/28	21	42.5	186	62	V+H	•	•
K 86S-3c	NU 611-2/18	18	39	205	69	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU K 86-4



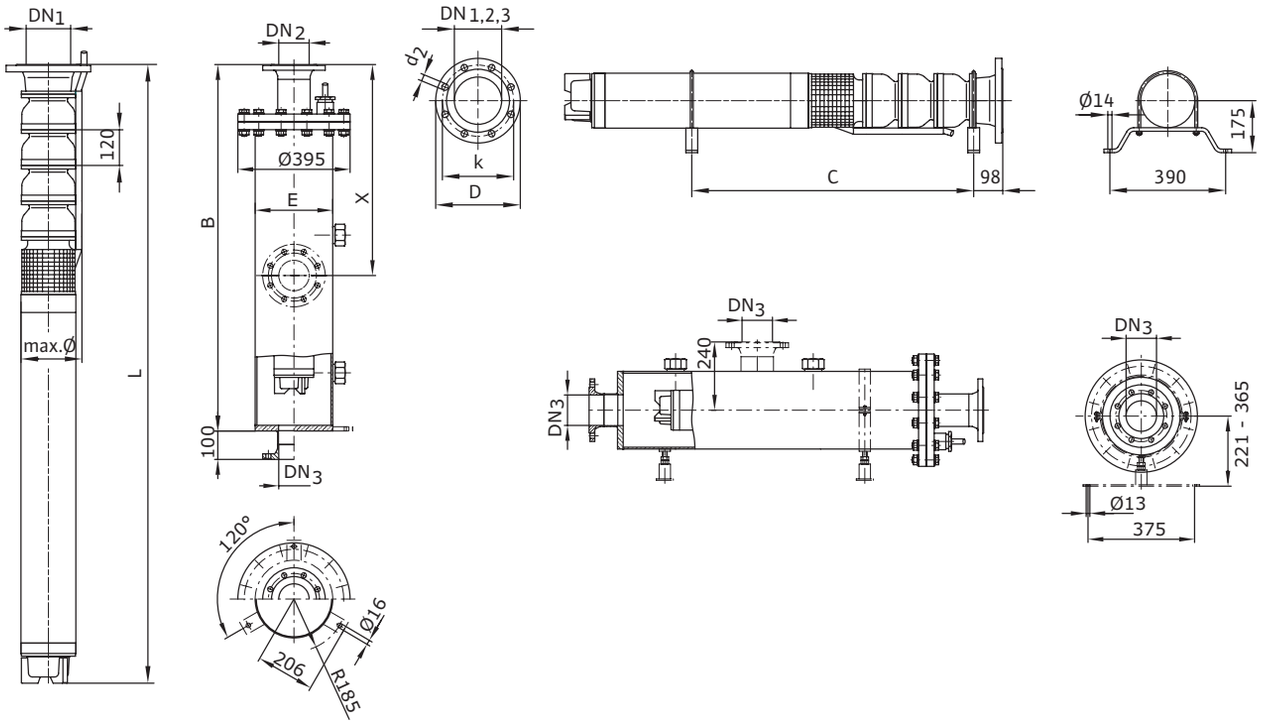
Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 86S-4a	NU 801-2/45	35	70	365	122	V+H	•	•
K 86S-4b	NU 801-2/40	28	58	315	105	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Dimension drawing

Wilo-EMU K 86



Maße

Wilo-EMU...	Type of motor	Impeller diameter	Dimensions					Weight	Weight of unit
			B	*C*	*E*	*L*	*ø* [3]	*Jacket*[7]	*m*
					mm			kg	
K 86-1a	NU 611-2/11	144/141	1700	750	273	1269	220	108	92
K 86S-1b	NU 611-2/7	131/128	1400	690	273	1144	220	100	80
K 86S-1c	NU 611-2/5	113/110	1400	670	273	1112	220	100	76
K 86-2a	NU 611-2/18	144/141	2000	940	273	1539	222	116	118
K 86S-2b	NU 611-2/15	128/125	2000	910	273	1474	220	116	111
K 86S-2c	NU 611-2/11	113/110	1700	870	273	1389	220	108	102
K 86S-3a	NU 801-2/35	142/139	2000	1030	273	1603	226	116	164
K 86S-3b	NU 801-2/28	128/125	2000	1000	273	1533	222	116	152
K 86S-3c	NU 611-2/18	123/120	2000	1060	273	1659	220	116	128
K 86S-4a	NU 801-2/45	142/139	2300	1200	273	1823	230	124	191
K 86S-4b	NU 801-2/40	128/125	2300	1180	273	1773	230	124	183

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN100 [7] Weight of pressure shroud

Flange dimensions

Wilo-EMU...	Connection			Pressure class			Dimensions		
	DN1	*DN2*	*DN3*	PN_1	PN_2	PN_3	*D2*	*k*	*d*
		mm			bar			mm	
K 86...	DN 100	DN 100	DN 100	10-16	10-16	10	8x18	180	220
K 86...	DN 125	DN 125	DN 125	10-16	10-16	10	8x18	210	250
K 86...	DN 150	DN 150	DN 150	10-16	10-16	10	8x22	240	285
K 86...	-	-	DN 200	-	-	10	8x22	295	340

Information for order placements

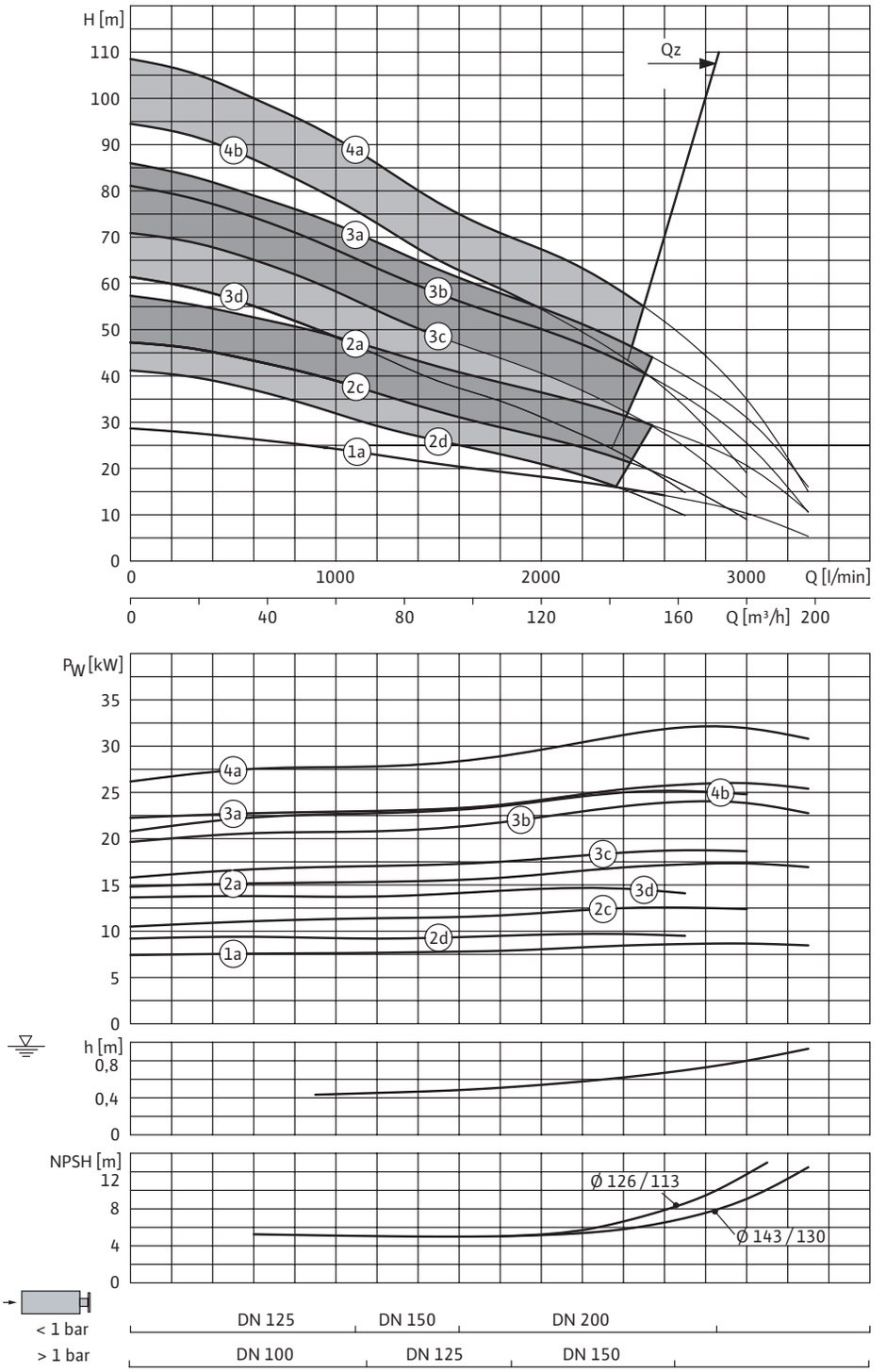
Wilo-EMU...	Type of motor	Cable cross-section	Fuse protection
		mm²	*I* A
K 86-1a	NU 611-2/11	2x 4G2,5	50
K 86S-1b	NU 611-2/7	2x 4G2,5	32
K 86S-1c	NU 611-2/5	2x 4G2,5	25
K 86-2a	NU 611-2/18	2x 4G6	80
K 86S-2b	NU 611-2/15	2x 4G4	63
K 86S-2c	NU 611-2/11	2x 4G4	50
K 86S-3a	NU 801-2/35	4G10 + 3x10	100
K 86S-3b	NU 801-2/28	4G4 + 3x4	63
K 86S-3c	NU 611-2/18	2x 4G6	80
K 86S-4a	NU 801-2/45	4G10 + 3x10	125
K 86S-4b	NU 801-2/40	4G10 + 3x10	100

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN100 [7] Weight of pressure shroud

Ordering information for standard pumps

Wilo-EMU...	Type of motor	Activation type	Cable cross-section	Length of connecting cable	Fuse protection		Art no.
			mm²	m	*I* A		
K 86-2a	NU 611-2/18	Star-delta	2x 4G6	25	50	L	6066610

Overview pump curve Wilo-EMU KM 87



4a = K 87S-4a + NU 801-2/45
4b = K 87S-4b + NU 801-2/40

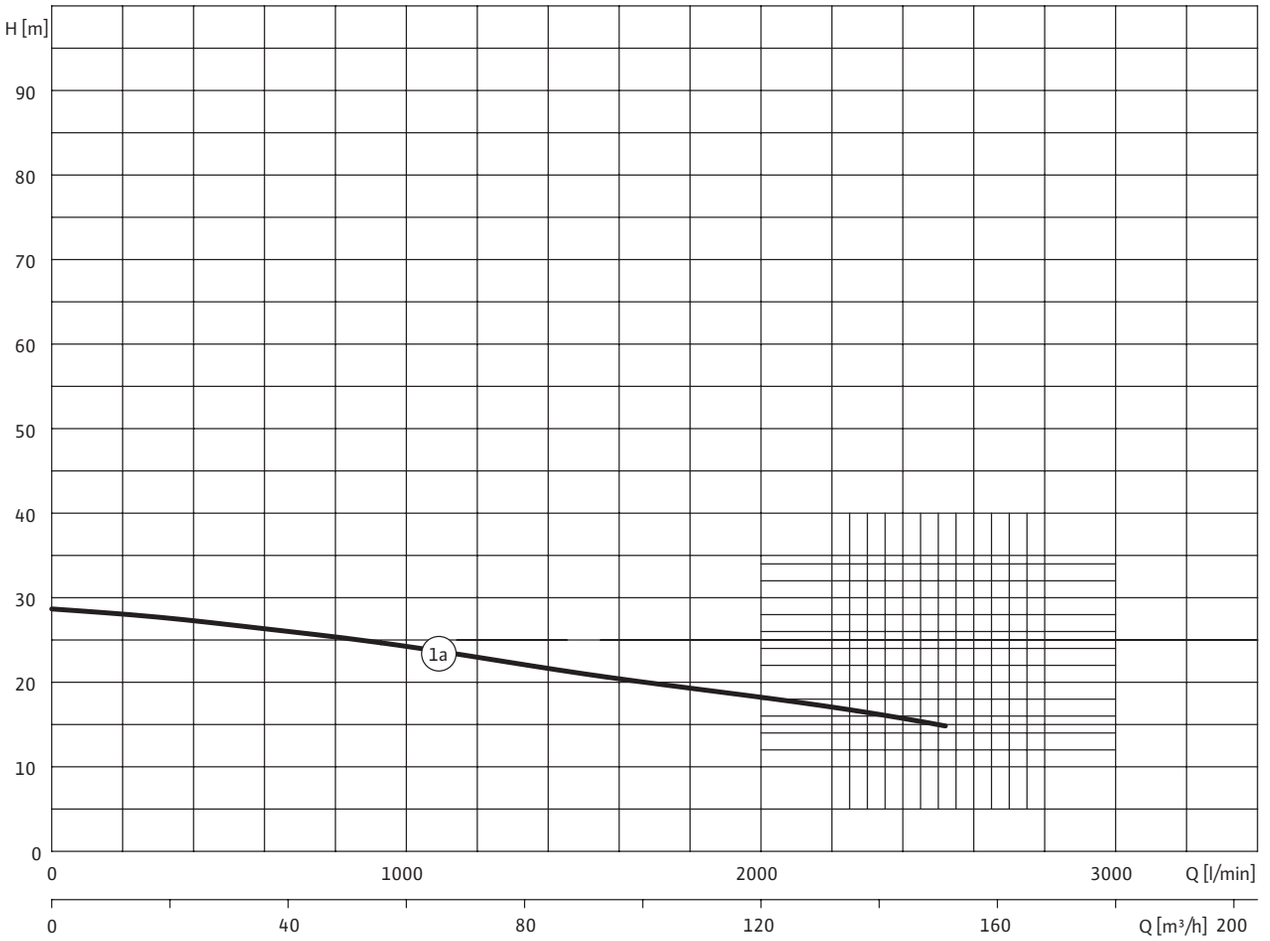
3a = K 87-3a + NU 801-2/40
3b = K 87S-3b + NU 801-2/35
3c = K 87S-3c + NU 801-2/28
3d = K 87S-3d + NU 611-2/18

2a = K 87-2a + NU 611-2/22
2c = K 87S-2c + NU 611-2/15
2d = K 87S-2d + NU 611-2/11

1a = K 87-1a + NU 611-2/11

3~400 V, 50 Hz, p = 1 kg/dm³, v = 1x10⁻⁶ m²/s, ISO 9906 Annex A

Pump curves Wilo-EMU K 87-1

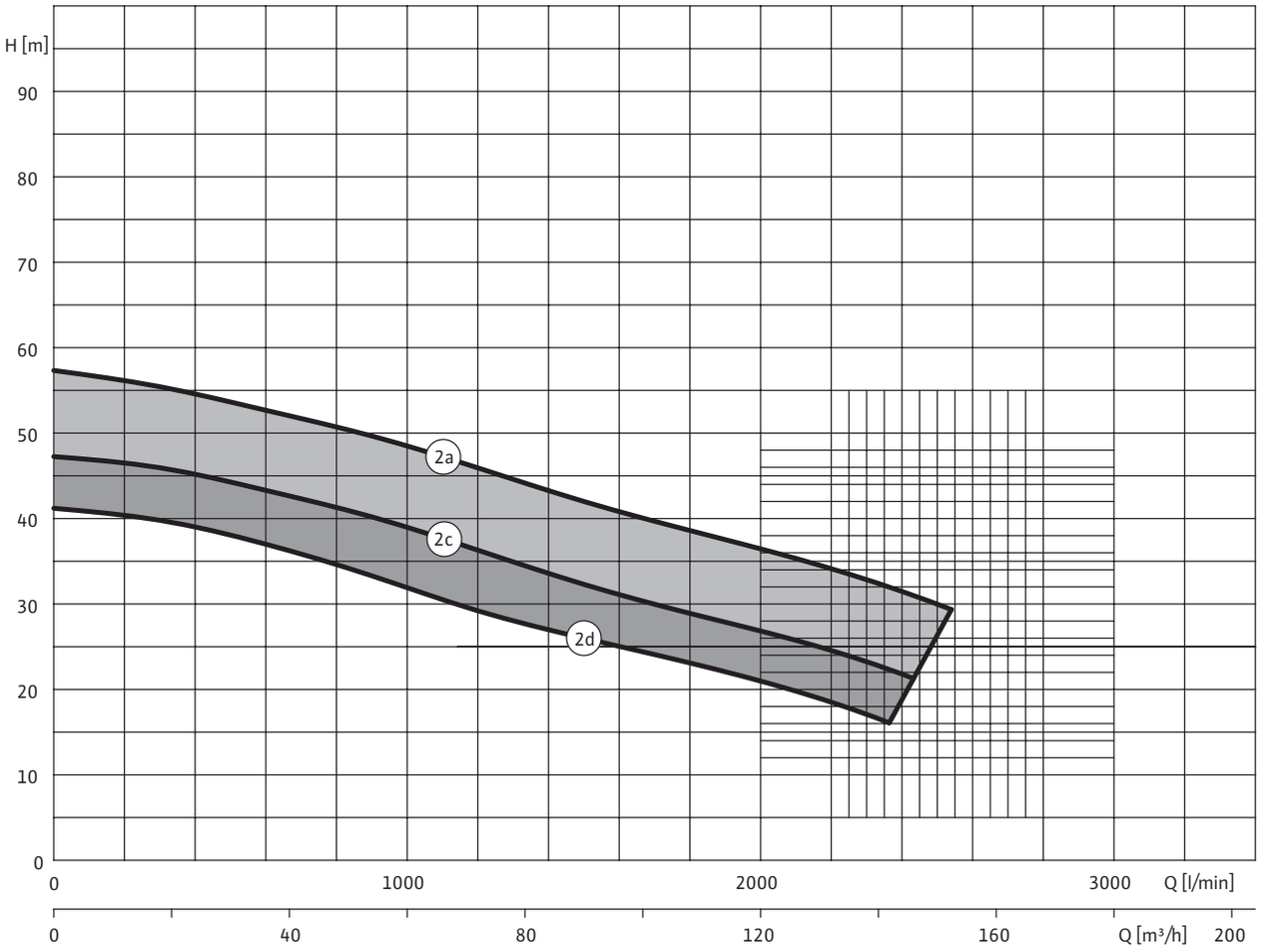


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 87-1a	NU 611-2/11	9.5	21	121	40.5	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU K 87-2

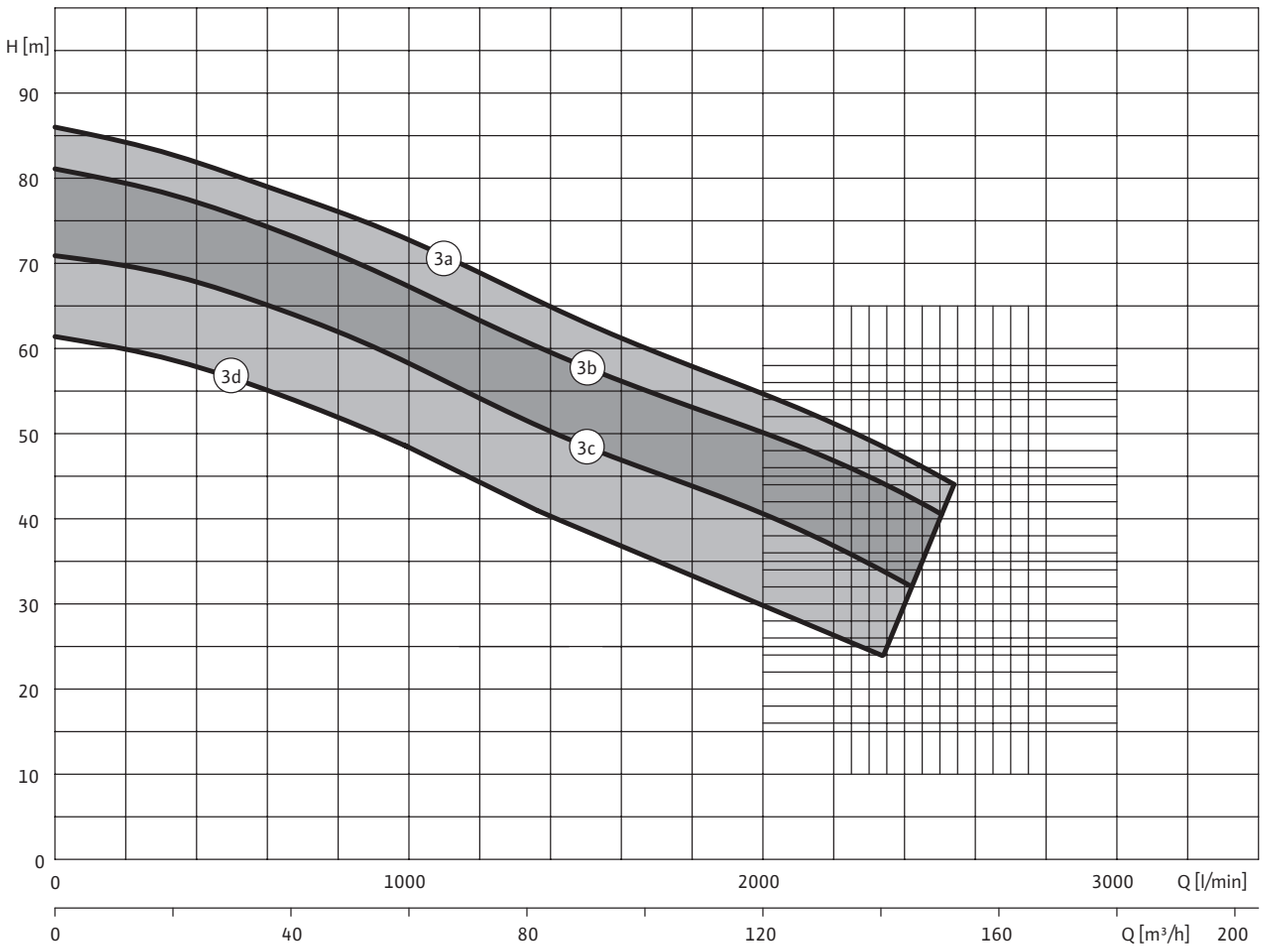


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 87-2a	NU 611-2/22	19	42.5	245	82	V+H	•	•
K 87S-2c	NU 611-2/15	14	30.5	160	54	V+H	•	•
K 87S-2d	NU 611-2/11	11	23.5	121	40.5	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU K 87-3

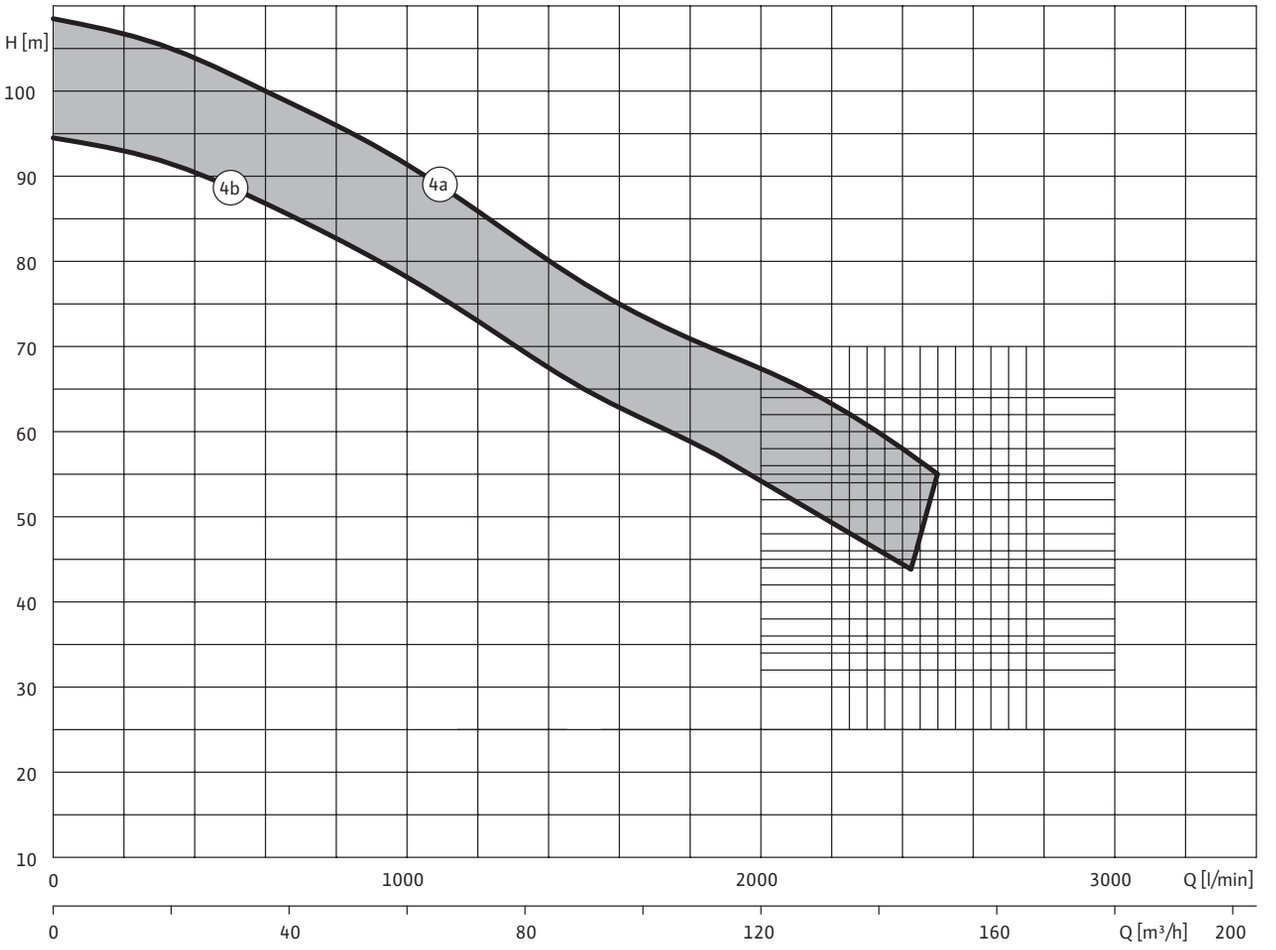


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 87-3a	NU 801-2/40	28	58	315	105	V+H	•	•
K 87S-3b	NU 801-2/35	26	52	270	90	V+H	•	•
K 87S-3c	NU 801-2/28	21	42.5	186	62	V+H	•	•
K 87S-3d	NU 611-2/18	18	39	205	69	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU K 87-4



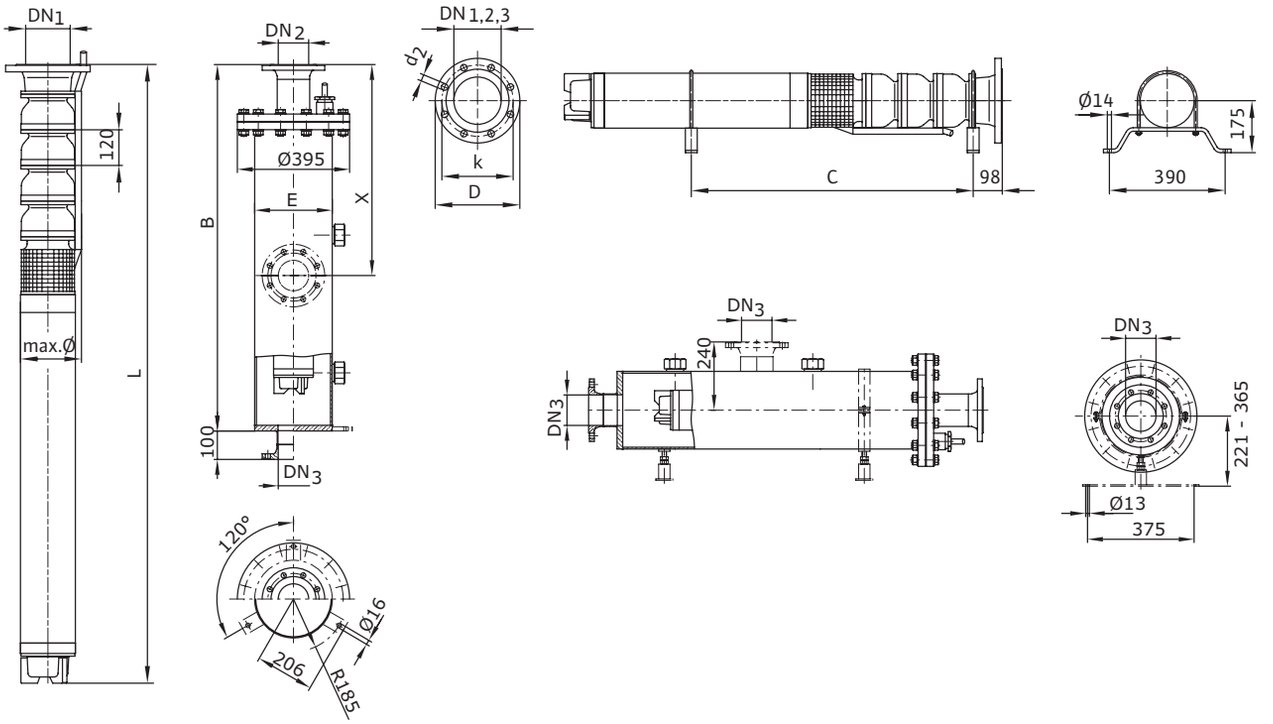
Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
K 87S-4a	NU 801-2/45	34	68	365	122	V+H	•	•
K 87S-4b	NU 801-2/40	28	58	315	105	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Dimension drawing

Wilo-EMU K 87



Dimensions, weights

Wilo-EMU...	Type of motor	Impeller diameter	Dimensions					Weight	Weight of unit
			B	*C*	*E*	*L*	*ø* [3]	*Jacket*[7]	*m*
					mm			kg	
K 87-1a	NU 611-2/11	143/130	1700	750	273	1269	220	108	92
K 87-2a	NU 611-2/22	143/130	2000	980	273	1614	222	116	125
K 87S-2c	NU 611-2/15	129/116	2000	910	273	1474	220	116	111
K 87S-2d	NU 611-2/11	126/113	1700	870	273	1389	220	108	102
K 87-3a	NU 801-2/40	143/130	2000	1060	273	1653	230	116	173
K 87S-3b	NU 801-2/35	137/124	2000	1030	273	1603	226	116	164
K 87S-3c	NU 801-2/28	129/116	2000	1000	273	1533	222	116	152
K 87S-3d	NU 611-2/18	126/113	2000	1060	273	1659	222	116	128
K 87S-4a	NU 801-2/45	137/124	2300	1200	273	1823	230	124	191
K 87S-4b	NU 801-2/40	129/116	2300	1180	273	1773	230	124	183

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN100 [7] Weight of pressure shroud

Flange dimensions

Wilo-EMU...	Connection			Pressure class			Dimensions		
	DN1	*DN2*	*DN3*	PN_1	PN_2	PN_3	*D2*	*k*	*d*
		mm			bar			mm	
K 87...	DN 100	DN 100	DN 100	10–16	10–16	10	8x18	180	220
K 87...	DN 125	DN 125	DN 125	10–16	10–16	10	8x18	210	250
K 87...	DN 150	DN 150	DN 150	10–16	10–16	10	8x22	240	285
K 87...	–	–	DN 200	–	–	10	8x22	295	340

Information for order placements

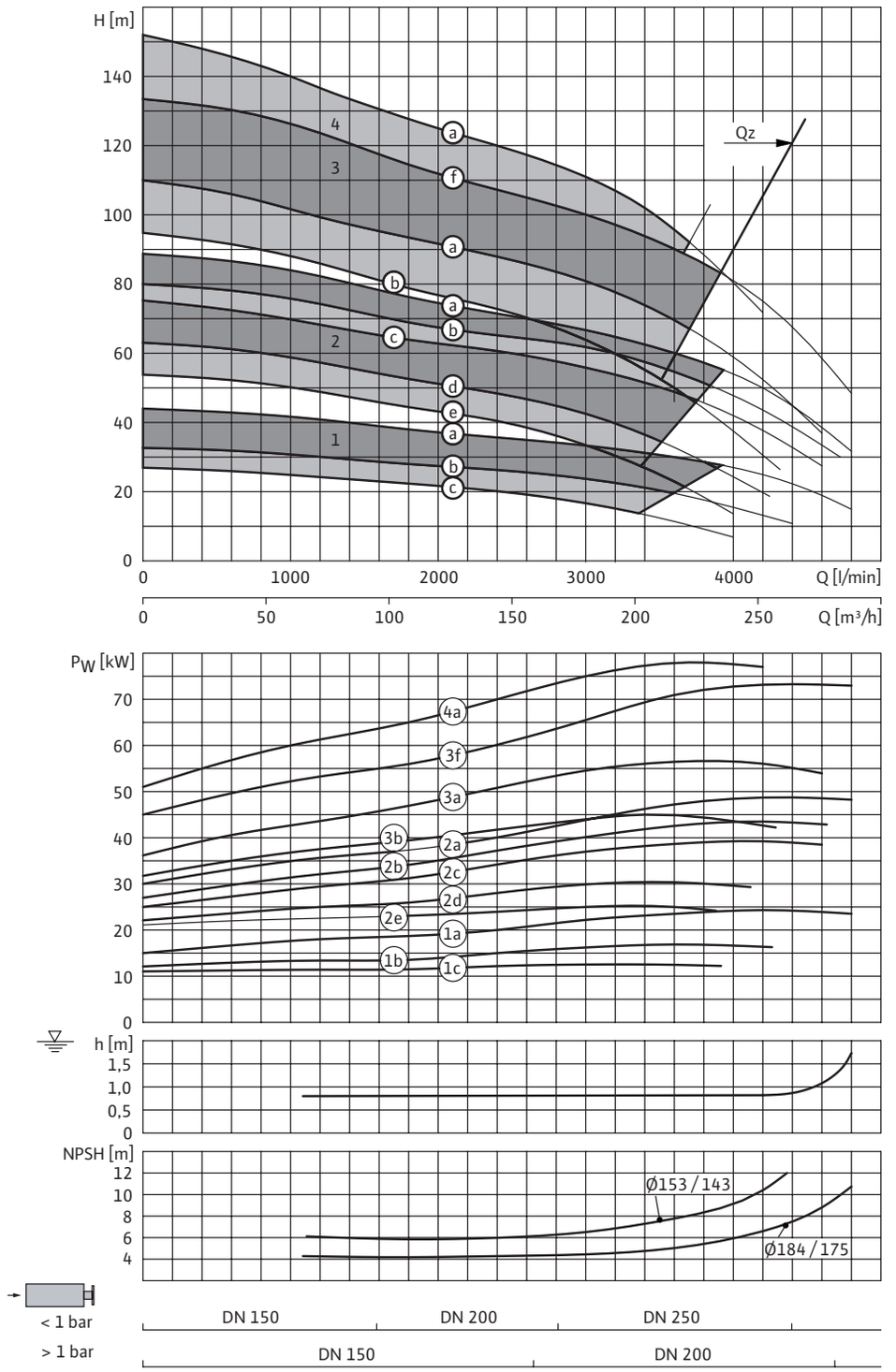
Wilo-EMU...	Type of motor	Cable cross-section	Fuse protection
		mm²	*I* A
K 87-1a	NU 611-2/11	2x 4G2,5	50
K 87-2a	NU 611-2/22	2x 4G6	80
K 87S-2c	NU 611-2/15	2x 4G4	63
K 87S-2d	NU 611-2/11	2x 4G2,5	50
K 87-3a	NU 801-2/40	4G10 + 3x10	100
K 87S-3b	NU 801-2/35	4G10 + 3x10	100
K 87S-3c	NU 801-2/28	4G4 + 3x4	63
K 87S-3d	NU 611-2/18	2x 4G6	80
K 87S-4a	NU 801-2/45	4G10 + 3x10	125
K 87S-4b	NU 801-2/40	4G10 + 3x10	100

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN100 [7] Weight of pressure shroud

Ordering information for standard pumps

Wilo-EMU...	Type of motor	Activation type	Cable cross-section	Length of connecting cable	Fuse protection		Art no.
			mm²	m	*I* A		
K 87-3a	NU 801-2/40	Star-delta	4G10 + 3x10	25	100	L	6066611
K 87S-3b	NU 801-2/35	Star-delta	4G10 + 3x10	25	100	L	6066612
K 87S-3c	NU 801-2/28	Star-delta	4G4 + 3x4	25	63	L	6066613

Overview pump curve Wilo-EMU KM 350



4a = KM 350S-4a + NU 911-2/60

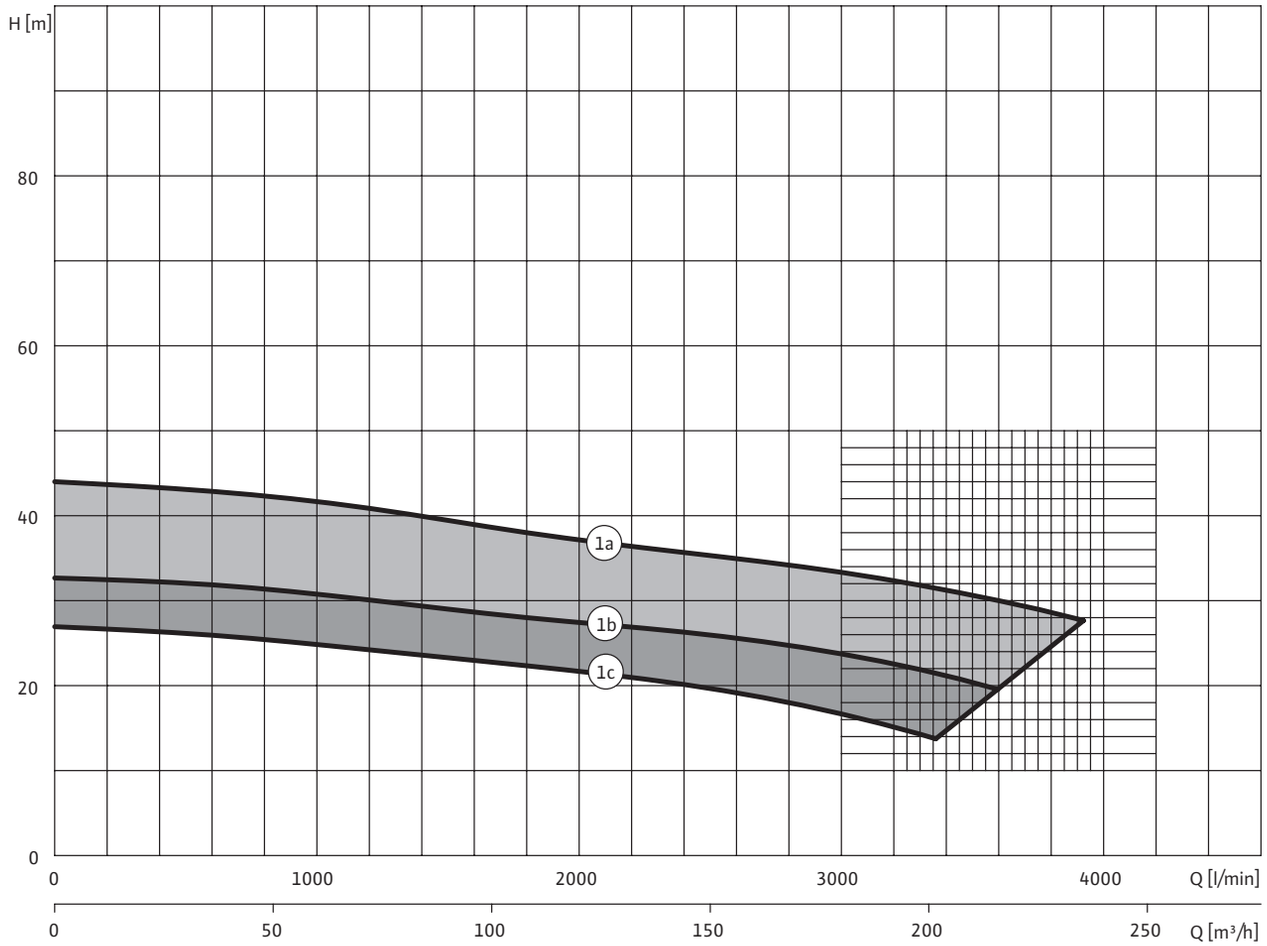
3a = KM 350S-3a + NU 911-2/45
3b = KM 350S-3b + NU 801-2/60
3f = KM 350-3f + NU 911-2/50

2a = KM 350-2a + NU 801-2/68
2a = KM 350-2a + NU 911-2/45
2b = KM 350S-2b + NU 801-2/60
2c = KM 350S-2c + NU 801-2/55
2d = KM 350S-2d + NU 801-2/45
2e = KM 350S-2e + NU 801-2/40

1a = KM 350-1a + NU 801-2/35
1b = KM 350S-1b + NU 801-2/28
1c = KM 350S-1c + NU 801-2/28

3~400 V, 50 Hz, p = 1 kg/dm³, v = 1x10⁻⁶ m²/s, ISO 9906 Annex A

Pump curves Wilo-EMU KM 350-1

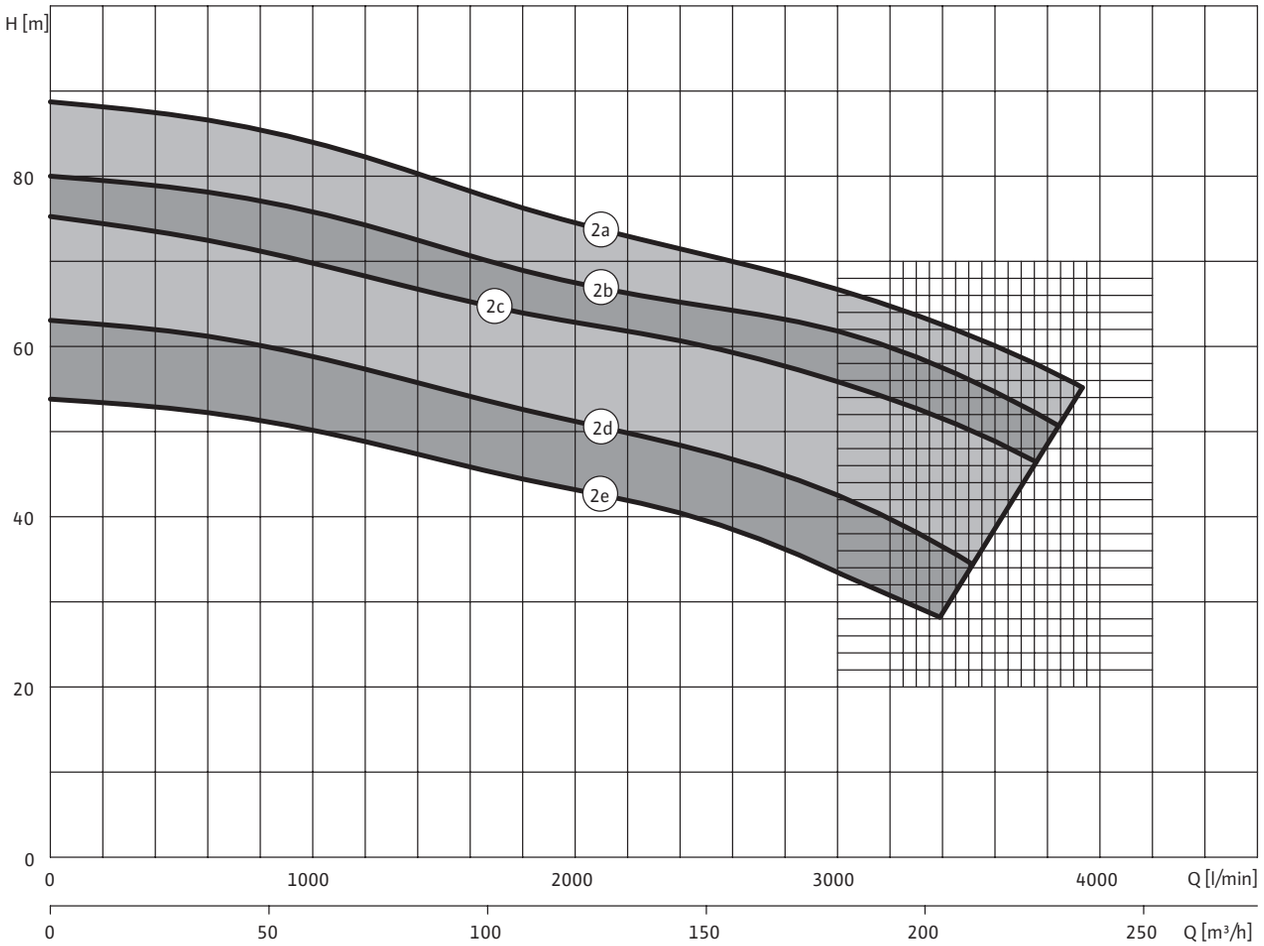


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 350-1a	NU 801-2/35	27.5	55	270	90	V+H	•	•
KM 350S-1b	NU 801-2/28	19	39	186	62	V+H	•	•
KM 350S-1c	NU 801-2/28	15	33.5	186	62	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU KM 350-2

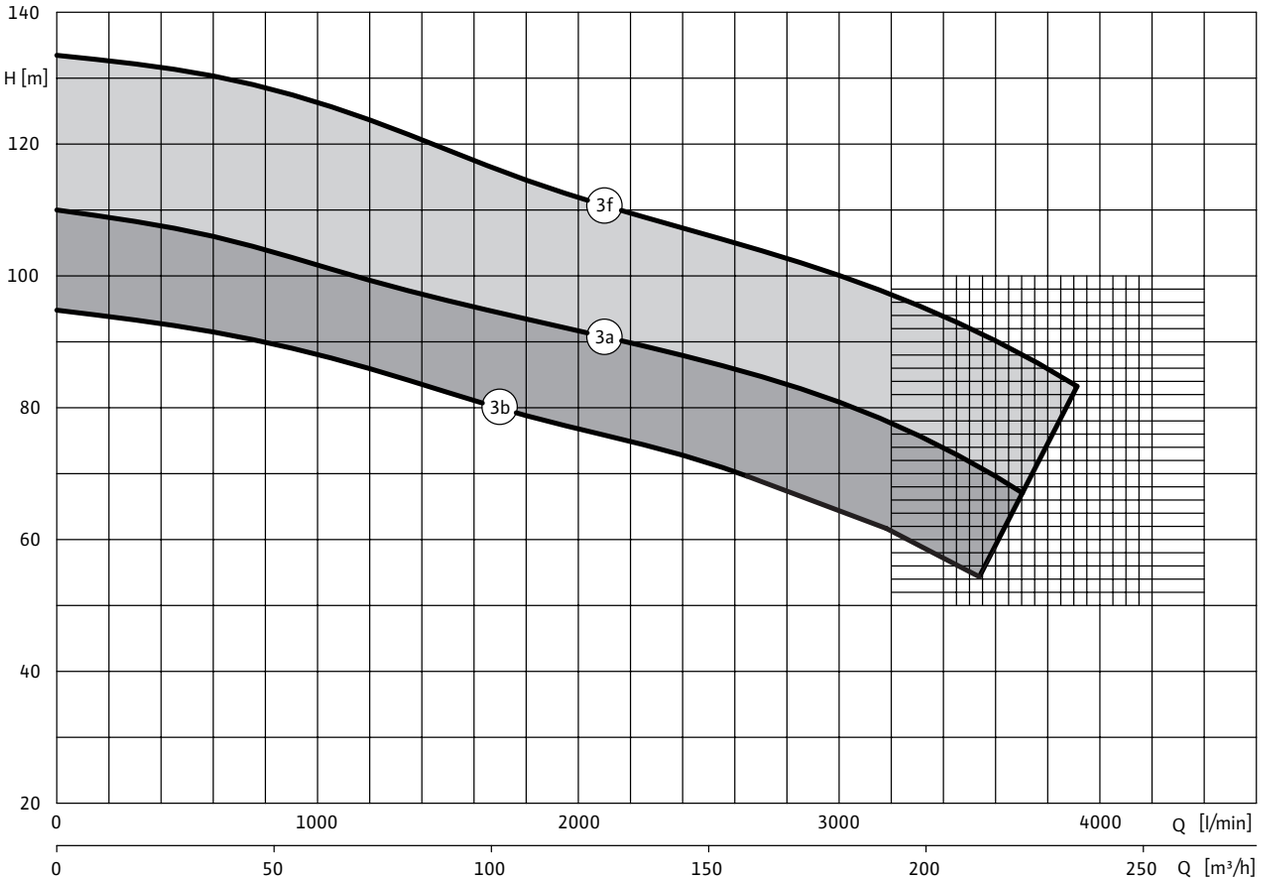


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 350-2a	NU 801-2/68	55	106	650	220	V	•	•
KM 350-2a	NU 911-2/45	55	116	700	235	V+H	•	•
KM 350S-2b	NU 801-2/60	53	104	580	194	V+H	•	•
KM 350S-2c	NU 801-2/55	46	92	530	177	V+H	•	•
KM 350S-2d	NU 801-2/45	36	72	365	122	V+H	•	•
KM 350S-2e	NU 801-2/40	30	60	315	105	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU KM 350-3

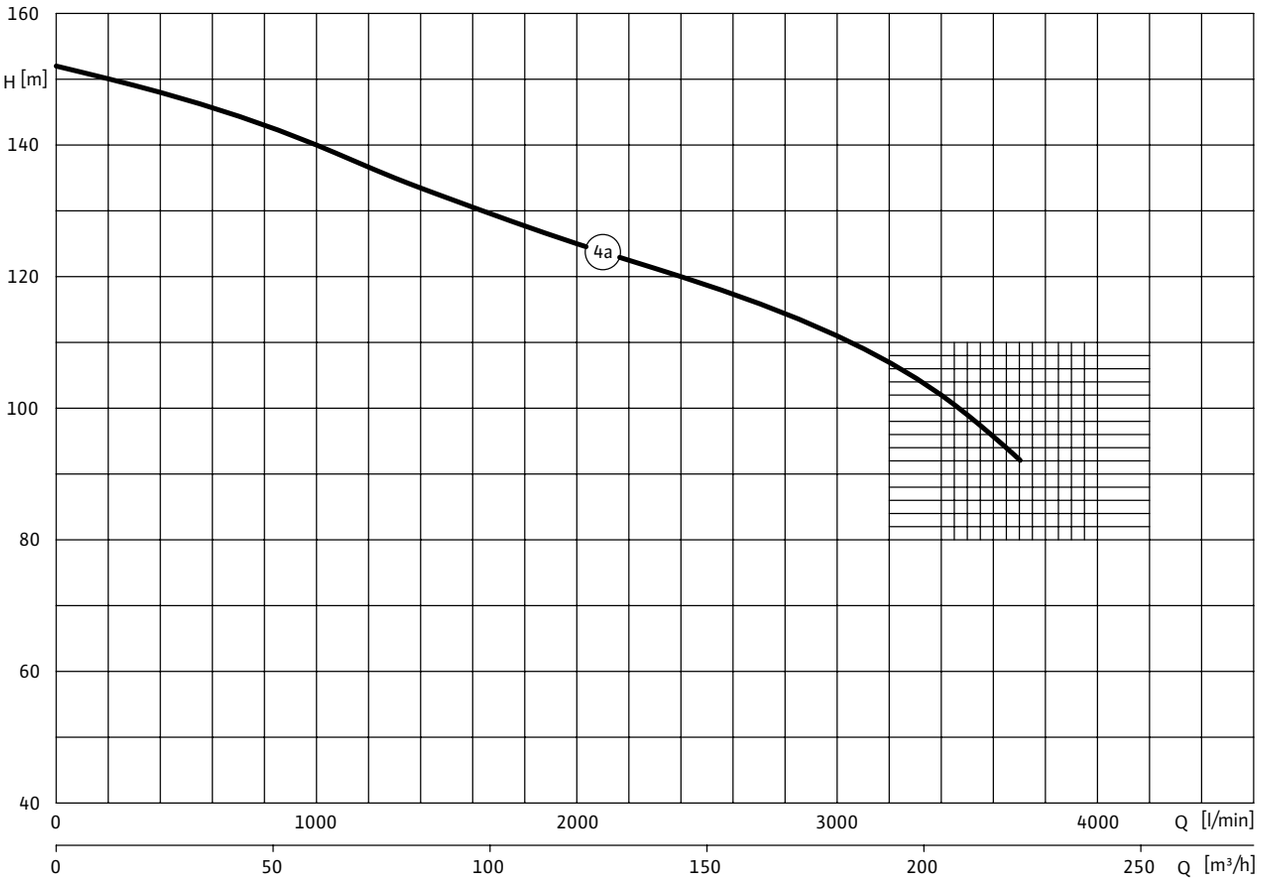


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 350S-3a	NU 911-2/45	70	141	700	235	V+H	•	•
KM 350S-3b	NU 801-2/60	53	104	580	194	V+H	•	•
KM 350-3f	NU 911-2/50	85	168	780	260	V+H	–	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU KM 350-4



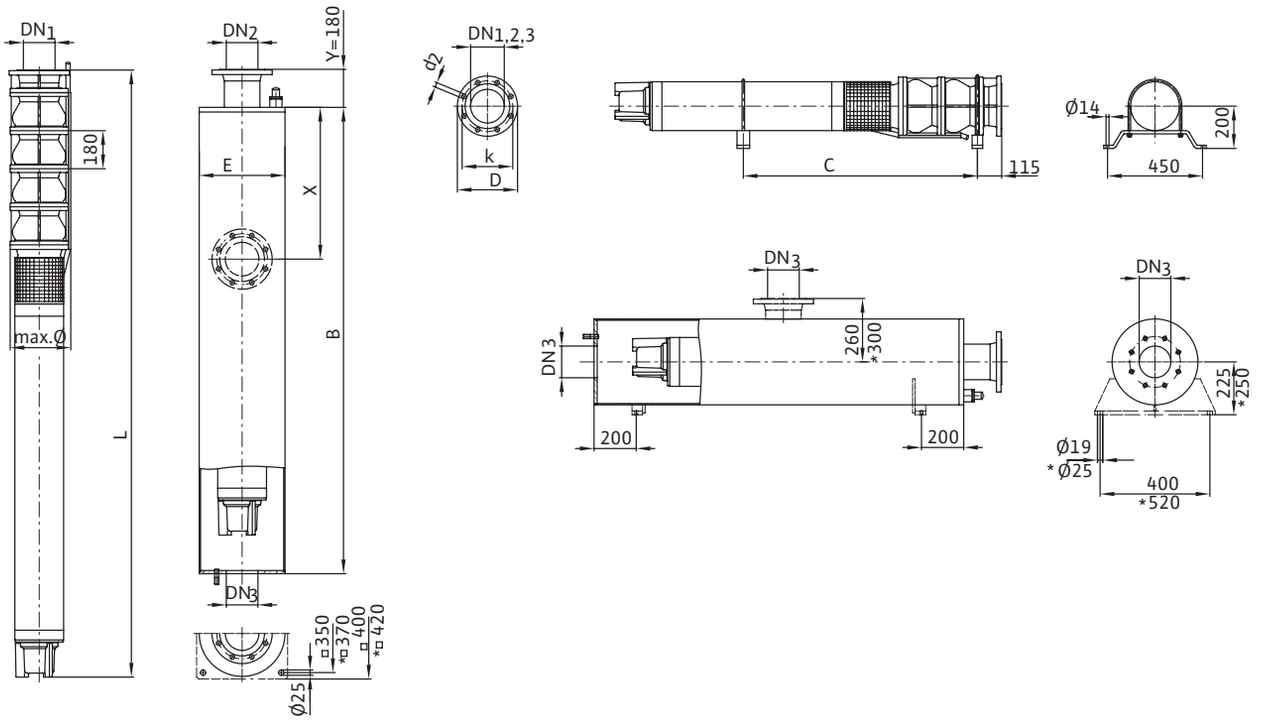
Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 350S-4a	NU 911-2/60	105	210	1280	430	V+H	–	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Dimension drawing

Wilo-EMU KM 350



Dimensions, weights

Wilo-EMU...	Type of motor	Impeller diameter	Dimensions					Weight	Weight of unit
			B	*C*	*E*	*L*	*ø* [3]	*Jacket*[7]	*m*
					mm			kg	
KM 350-1a	NU 801-2/35	184/175	1690	930	355.6	1515	297	127	192
KM 350S-1b	NU 801-2/28	164/154	1620	900	355.6	1445	290	123	180
KM 350S-1c	NU 801-2/28	153/143	1620	900	355.6	1445	288	123	180
KM 350-2a	NU 801-2/68	184/175	2200	–	355.6	2025	287	151	284
KM 350-2a	NU 911-2/45	184/175	2180	1280	406.4*	2010	313	200	347
KM 350S-2b	NU 801-2/60	176/167	2120	1240	355.6	1945	287	147	270
KM 350S-2c	NU 801-2/55	171/161	2070	1210	355.6	1895	287	145	262
KM 350S-2d	NU 801-2/45	161/151	1970	1160	355.6	1795	298	140	244
KM 350S-2e	NU 801-2/40	153/143	1920	1140	355.6	1745	298	138	236
KM 350S-3a	NU 911-2/45	170/160	2360	1460	406.4*	2190	313	215	381
KM 350S-3b	NU 801-2/60	161/151	2300	1420	355.6	2125	287	156	304
KM 350-3f	NU 911-2/50	184/175	2410	1480	406.4*	2240	295	220	395
KM 350S-4a	NU 911-2/60	170/160	2690	1710	406.4*	2520	295	235	455

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN150 [7] Weight of pressure shroud * only with DN 150

Flange dimensions

Wilo-EMU...	Connection			Pressure class			Dimensions		
	DN1	*DN2*	*DN3*	PN_1	PN_2	PN_3	*D2*	*k*	*d*
		mm			bar			mm	
KM 350...	DN 150	DN 150	DN 150	10-16	10-16	10	8x22	240	285
KM 350...	-	-	DN 200	-	-	10	8x22	295	340
KM 350...	-	-	DN 250	-	-	10	12x22	350	395

Information for order placements

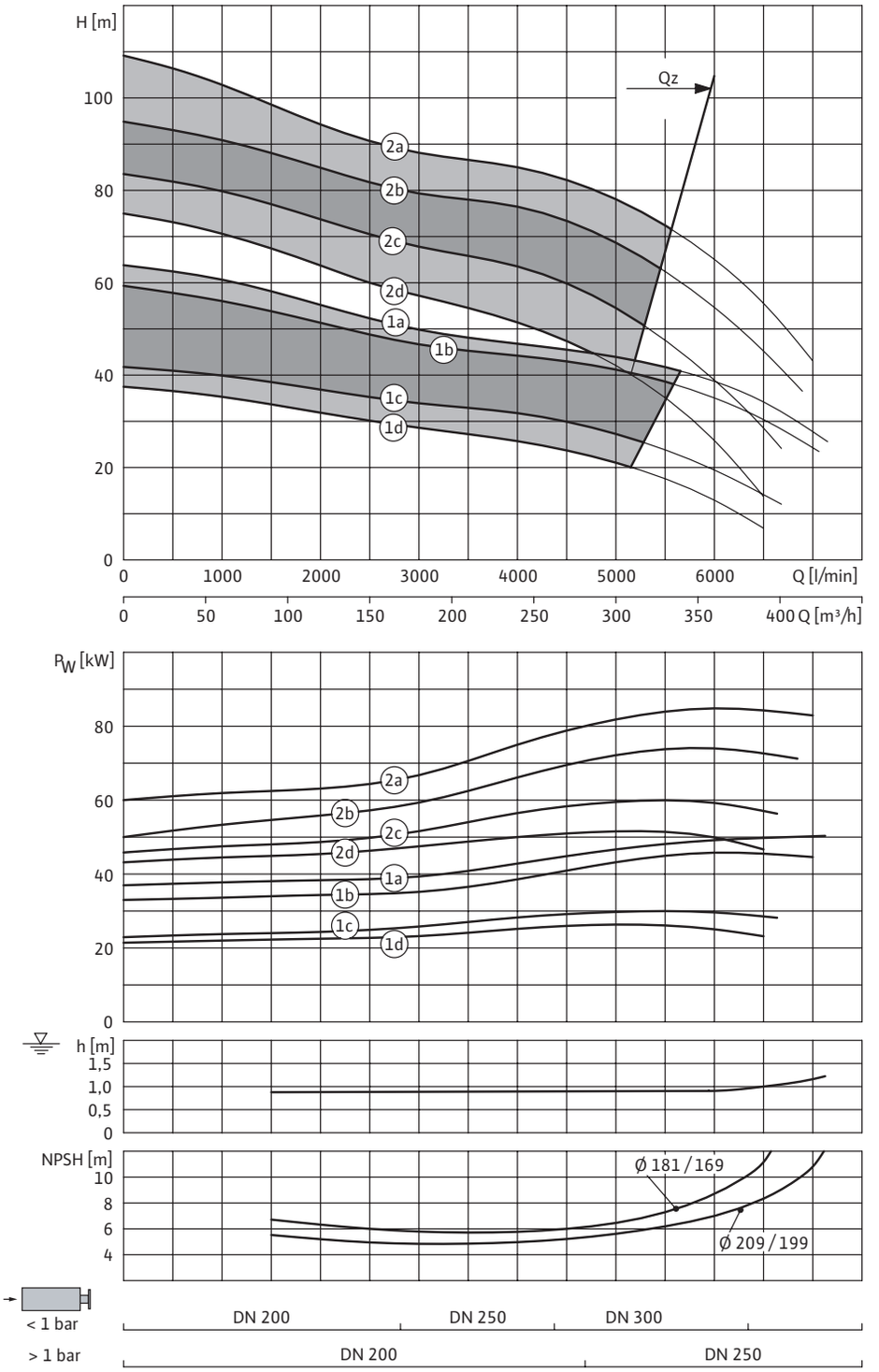
Wilo-EMU...	Type of motor	Cable cross-section	Fuse protection
			I
		mm^2	A
KM 350-1a	NU 801-2/35	4G10 + 3x10	100
KM 350S-1b	NU 801-2/28	4G4 + 3x4	63
KM 350S-1c	NU 801-2/28	4G4 + 3x4	63
KM 350-2a	NU 801-2/68	7x1x16 E	200
KM 350-2a	NU 911-2/45	4G25 + 3x25	200
KM 350S-2b	NU 801-2/60	7x1x16 E	200
KM 350S-2c	NU 801-2/55	4G16 + 3x16	160
KM 350S-2d	NU 801-2/45	4G10 + 3x10	125
KM 350S-2e	NU 801-2/40	4G10 + 3x10	100
KM 350S-3a	NU 911-2/45	4G25 + 3x25	200
KM 350S-3b	NU 801-2/60	7x1x16 E	200
KM 350-3f	NU 911-2/50	4G25 + 3x25	224
KM 350S-4a	NU 911-2/60	7x1x25 E	315

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN150 [7] Weight of pressure shroud * only with DN 150

Ordering information for standard pumps

Wilo-EMU...	Type of motor	Activation type	Cable cross-section	Length of connecting cable	Fuse protection		Art no.
					I		
			mm^2	m	A		
KM 350-2a	NU 911-2/45	Star-delta	4G25 + 3x25	25	200	L	6065508
KM 350S-2b	NU 801-2/60	Star-delta	7x1x16 E	25	200	L	6065507
KM 350S-2c	NU 801-2/55	Star-delta	4G16 + 3x16	25	160	L	6065506
KM 350S-2d	NU 801-2/45	Star-delta	4G10 + 3x10	25	125	L	6065505

Overview pump curve Wilo-EMU KM 750

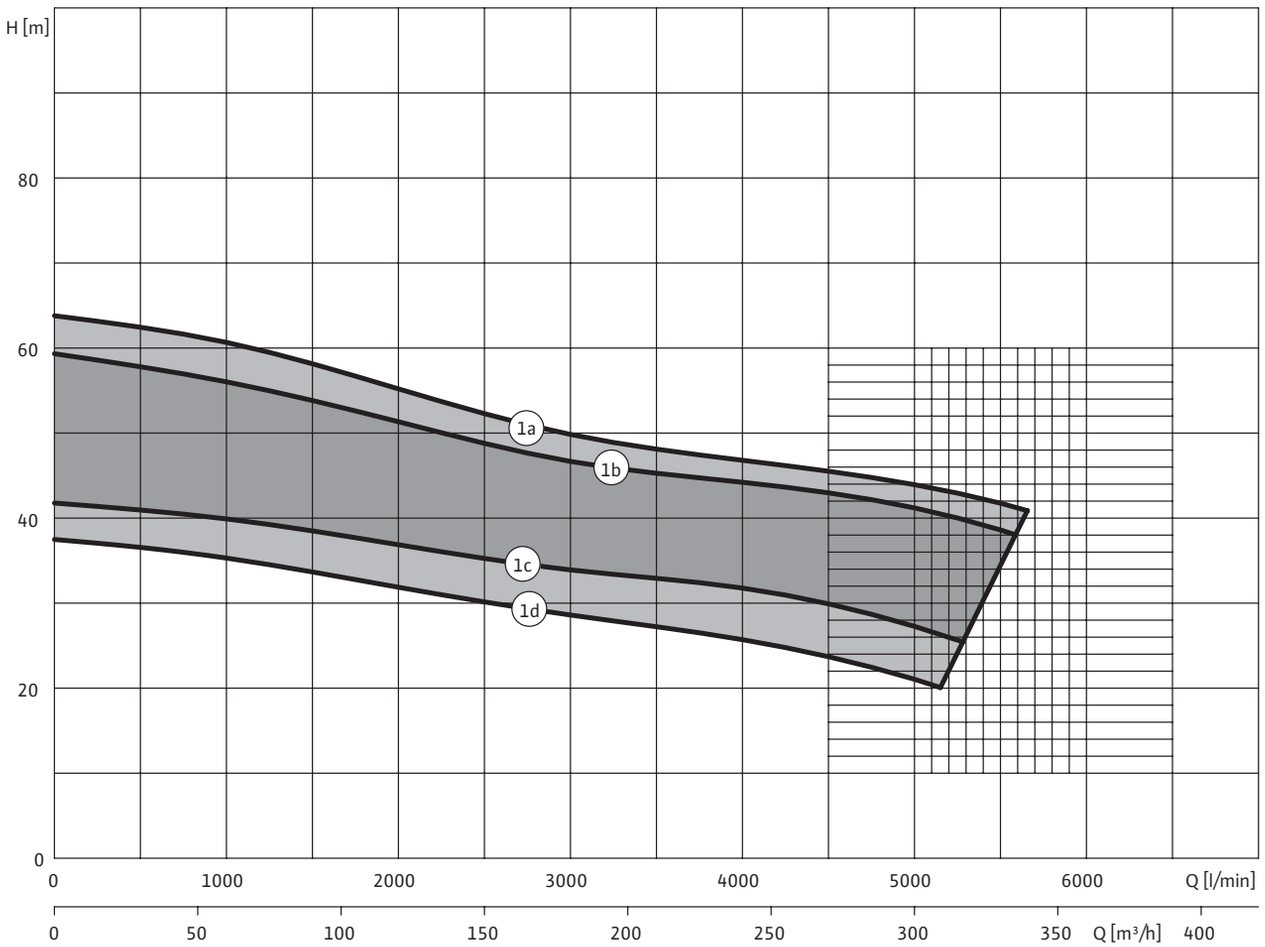


2a = KM 750S-2a + NU 911-2/60
2b = KM 750S-2b + NU 911-2/50
2c = KM 750S-2c + NU 911-2/45
2d = KM 750S-2d + NU 911-2/45

1a = KM 750-1a + NU 801-2/68
1a = KM 750-1a + NU 911-2/45
1b = KM 750S-1b + NU 801-2/60
1c = KM 750S-1c + NU 801-2/45
1d = KM 750S-1d + NU 801-2/40

3~400 V, 50 Hz, p = 1 kg/dm³, v = 1x10⁻⁶ m²/s, ISO 9906 Annex A

Pump curves Wilo-EMU KM 750-1

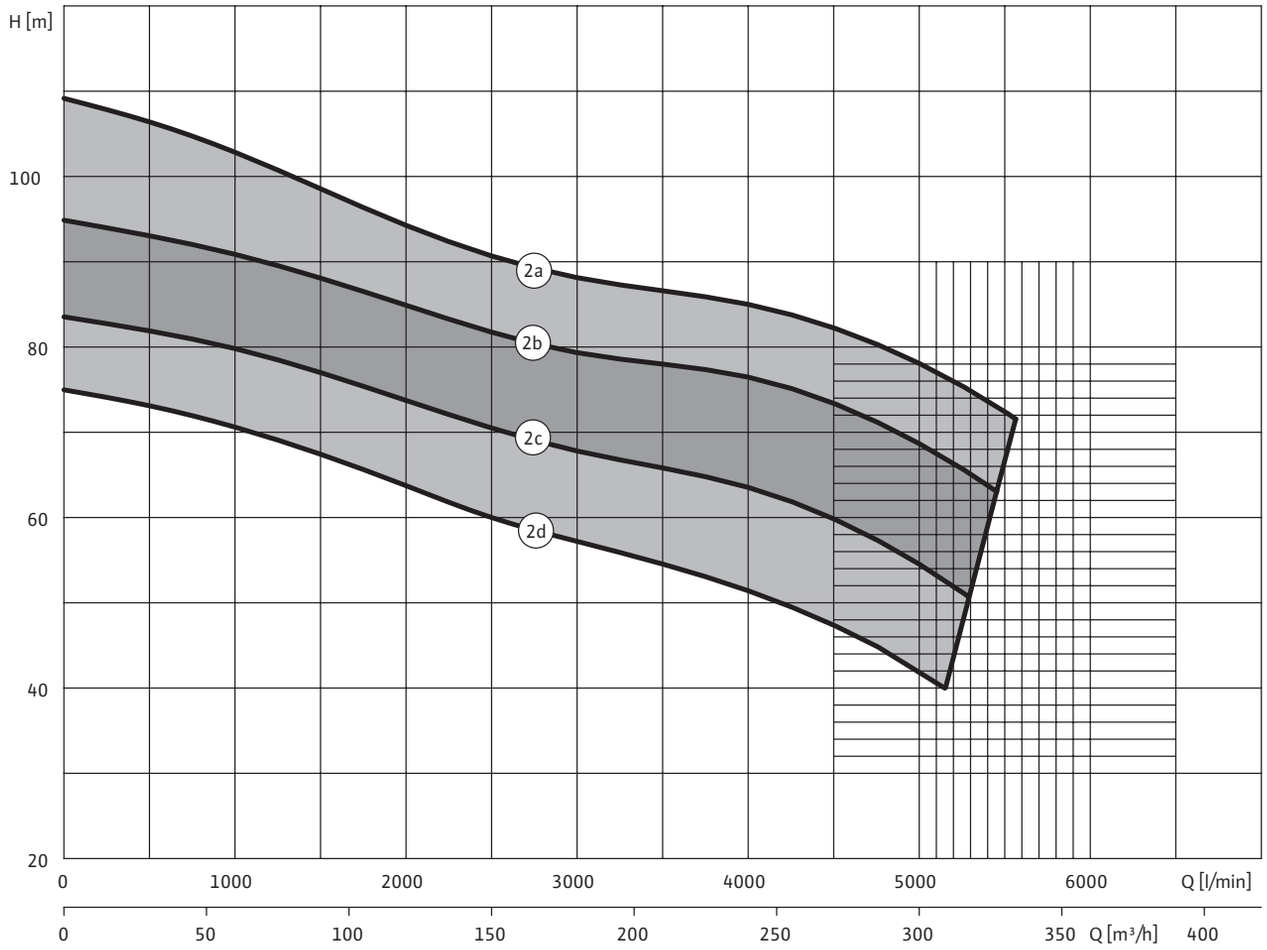


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 750-1a	NU 801-2/68	56	108	650	220	V	•	•
KM 750-1a	NU 911-2/45	56	118	700	235	V+H	•	•
KM 750S-1b	NU 801-2/60	53	104	580	194	V+H	•	•
KM 750S-1c	NU 801-2/45	35	70	365	122	V+H	•	•
KM 750S-1d	NU 801-2/40	32	61	315	105	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU KM 750-2



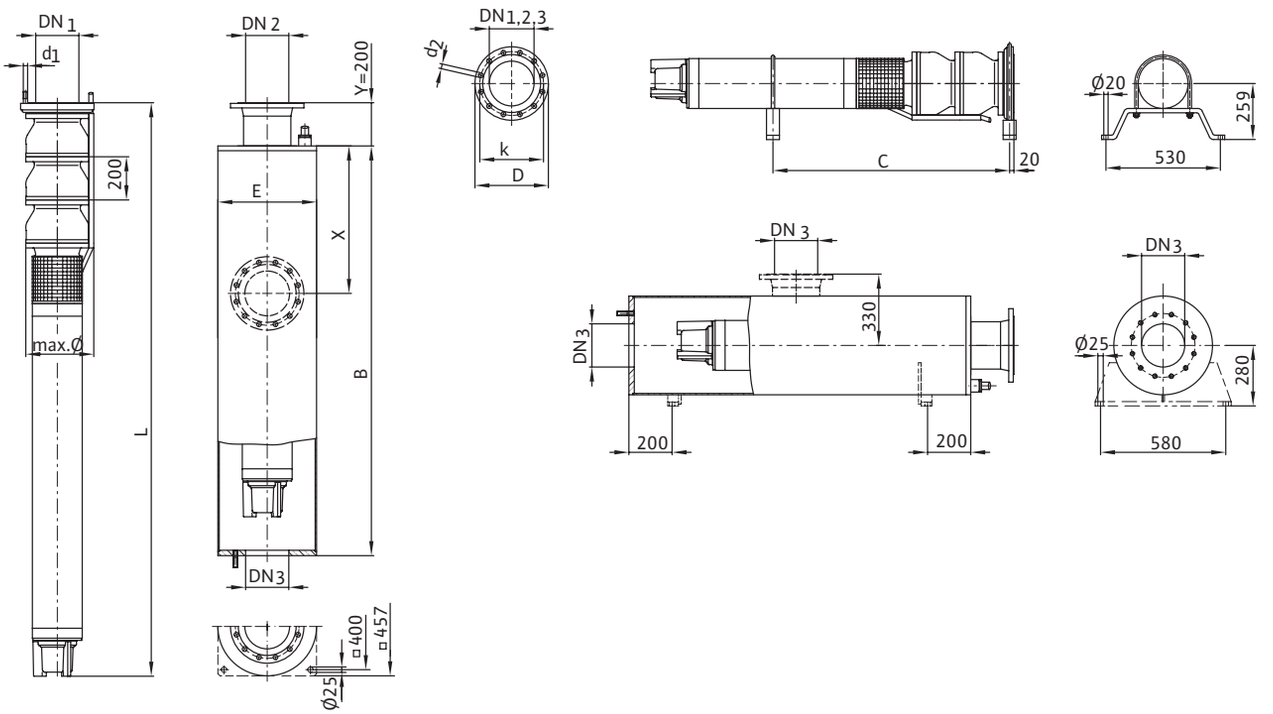
Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 750S-2a	NU 911-2/60	100	205	1280	430	V+H	•	•
KM 750S-2b	NU 911-2/50	85	168	780	260	V+H	•	•
KM 750S-2c	NU 911-2/45	70	141	700	235	V+H	•	•
KM 750S-2d	NU 911-2/45	64	130	700	235	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Dimension drawing

Wilo-EMU KM 750



Dimensions, weights

Wilo-EMU...	Type of motor	Impeller diameter	Dimensions					Weight	Weight of unit
			B	*C*	*E*	*L*	*ø* [3]	*Jacket*[7]	*m*
					mm			kg	
KM 750-1a	NU 801-2/68	209/199	1960	–	457	1805	340	237	259
KM 750-1a	NU 911-2/45	209/199	1940	1150	457	1790	359	237	322
KM 750S-1b	NU 801-2/60	205/195	1880	1110	457	1725	340	231	245
KM 750S-1c	NU 801-2/45	186/175	1730	1030	457	1575	348	221	219
KM 750S-1d	NU 801-2/40	181/169	1680	1010	457	1525	348	217	211
KM 750S-2a	NU 911-2/60	200/190	2290	1420	457	2140	350	260	403
KM 750S-2b	NU 911-2/50	194/184	2190	1370	457	2040	347	252	377
KM 750S-2c	NU 911-2/45	186/175	2140	1350	457	1990	359	249	363
KM 750S-2d	NU 911-2/45	181/169	2140	1350	457	1990	359	249	363

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN200 [7] Weight of pressure shroud

Flange dimensions

Wilo-EMU...	Connection			Pressure class			Dimensions		
	DN1	*DN2*	*DN3*	PN_1	PN_2	PN_3	*D2*	*k*	*d*
		mm			bar			mm	
KM 750...	DN 200	–	–	10	–	–	8xM20	295	340
KM 750...	DN 200	–	–	16	–	–	12xM20	295	340
KM 750...	–	DN 200	DN 200	–	10	10	8x22	295	340
KM 750...	–	DN 200	–	–	16	–	12x22	295	340
KM 750...	–	–	DN 250	–	–	10	12x22	350	395
KM 750...	–	–	DN 300	–	–	10	12x22	400	445

Information for order placements

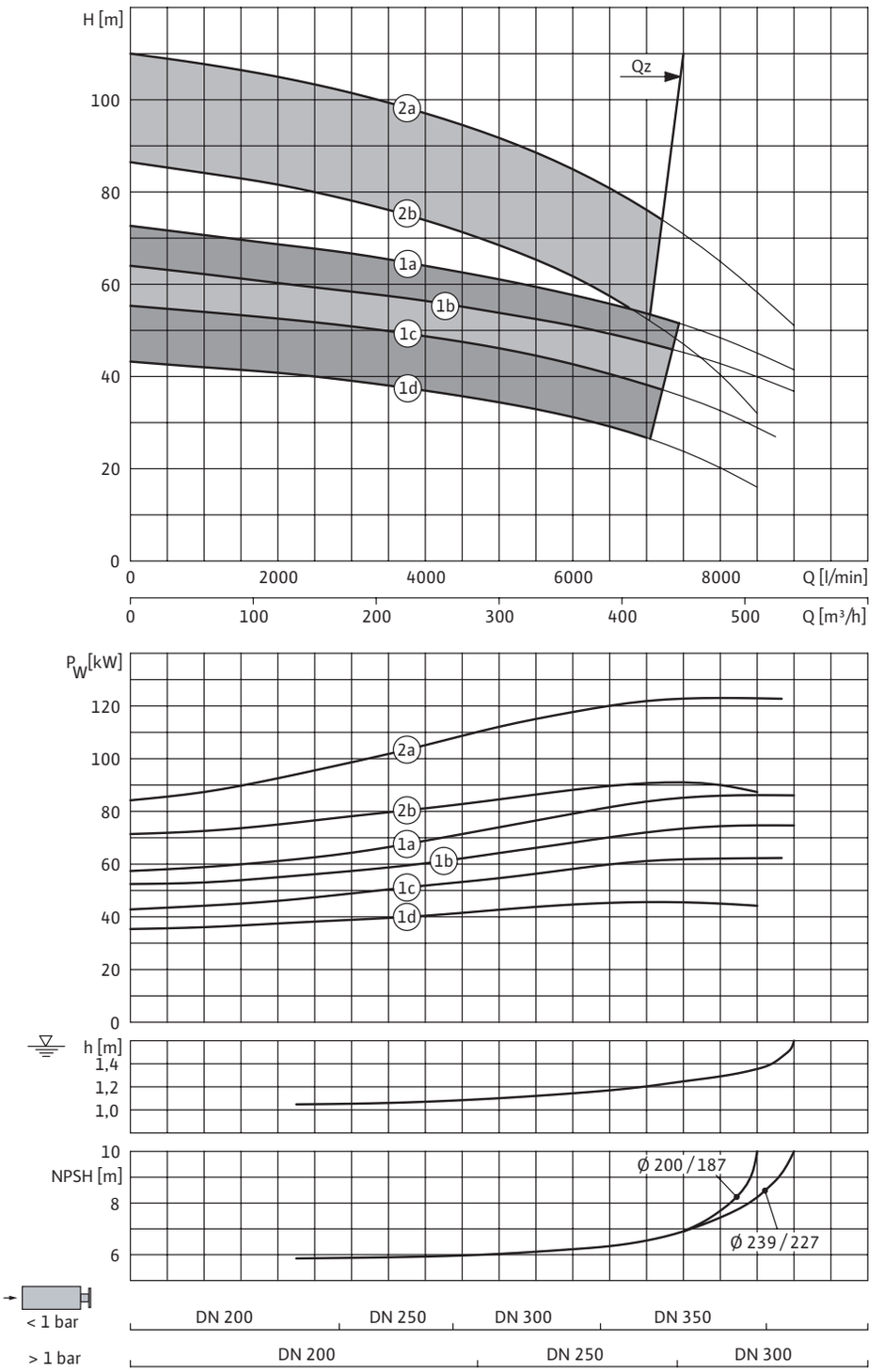
Wilo-EMU...	Type of motor	Cable cross-section	Fuse protection
		mm²	*I* A
KM 750-1a	NU 801-2/68	7x1x16 E	200
KM 750-1a	NU 911-2/45	4G25 + 3x25	200
KM 750S-1b	NU 801-2/60	7x1x16 E	200
KM 750S-1c	NU 801-2/45	4G10 + 3x10	125
KM 750S-1d	NU 801-2/40	4G10 + 3x10	100
KM 750S-2a	NU 911-2/60	7x1x25 E	315
KM 750S-2b	NU 911-2/50	4G25 + 3x25	224
KM 750S-2c	NU 911-2/45	4G25 + 3x25	200
KM 750S-2d	NU 911-2/45	4G25 + 3x25	200

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN200 [7] Weight of pressure shroud

Ordering information for standard pumps

Wilo-EMU...	Type of motor	Activation type	Cable cross-section	Length of connecting cable	Fuse protection		Art no.
			mm²	m	*I* A		
KM 750S-2a	NU 911-2/60	Star-delta	7x1x25 E	25	315	L	6065504
KM 750S-2b	NU 911-2/50	Star-delta	4G25 + 3x25	25	224	L	6065503
KM 750S-2c	NU 911-2/45	Star-delta	4G25 + 3x25	25	200	L	6065502

Overview pump curve Wilo-EMU KM 1300

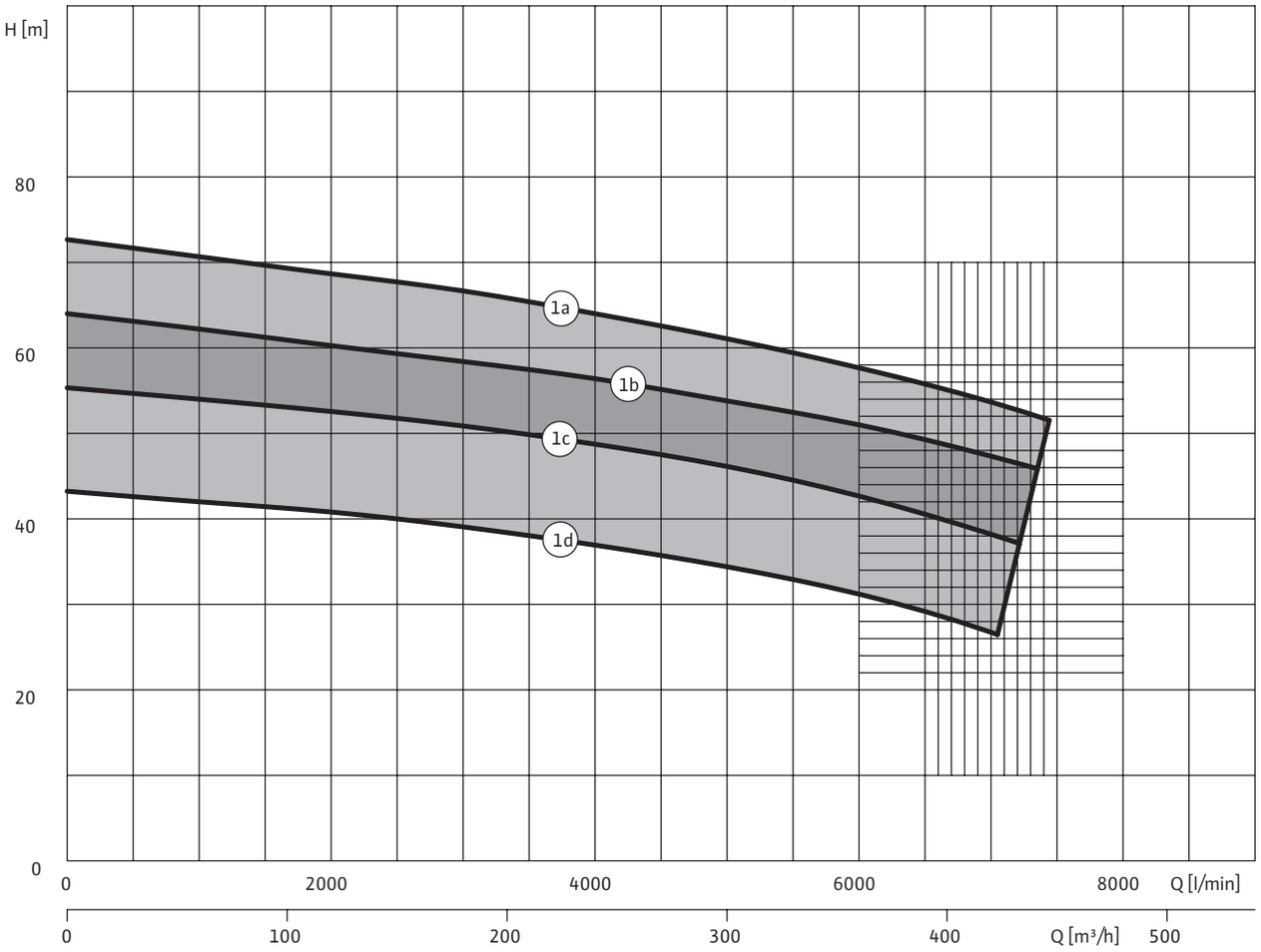


2a = KM 1300S-2a + NU 911-2/75
2b = KM 1300S-2b + NU 911-2/60

1a = KM 1300-1a + NU 911-2/60
1b = KM 1300S-1b + NU 911-2/50
1c = KM 1300S-1c + NU 911-2/45
1d = KM 1300S-1d + NU 801-2/60

3~400 V, 50 Hz, p = 1 kg/dm³, v = 1x10⁻⁶ m²/s, ISO 9906 Annex A

Pump curves Wilo-EMU KM 1300-1

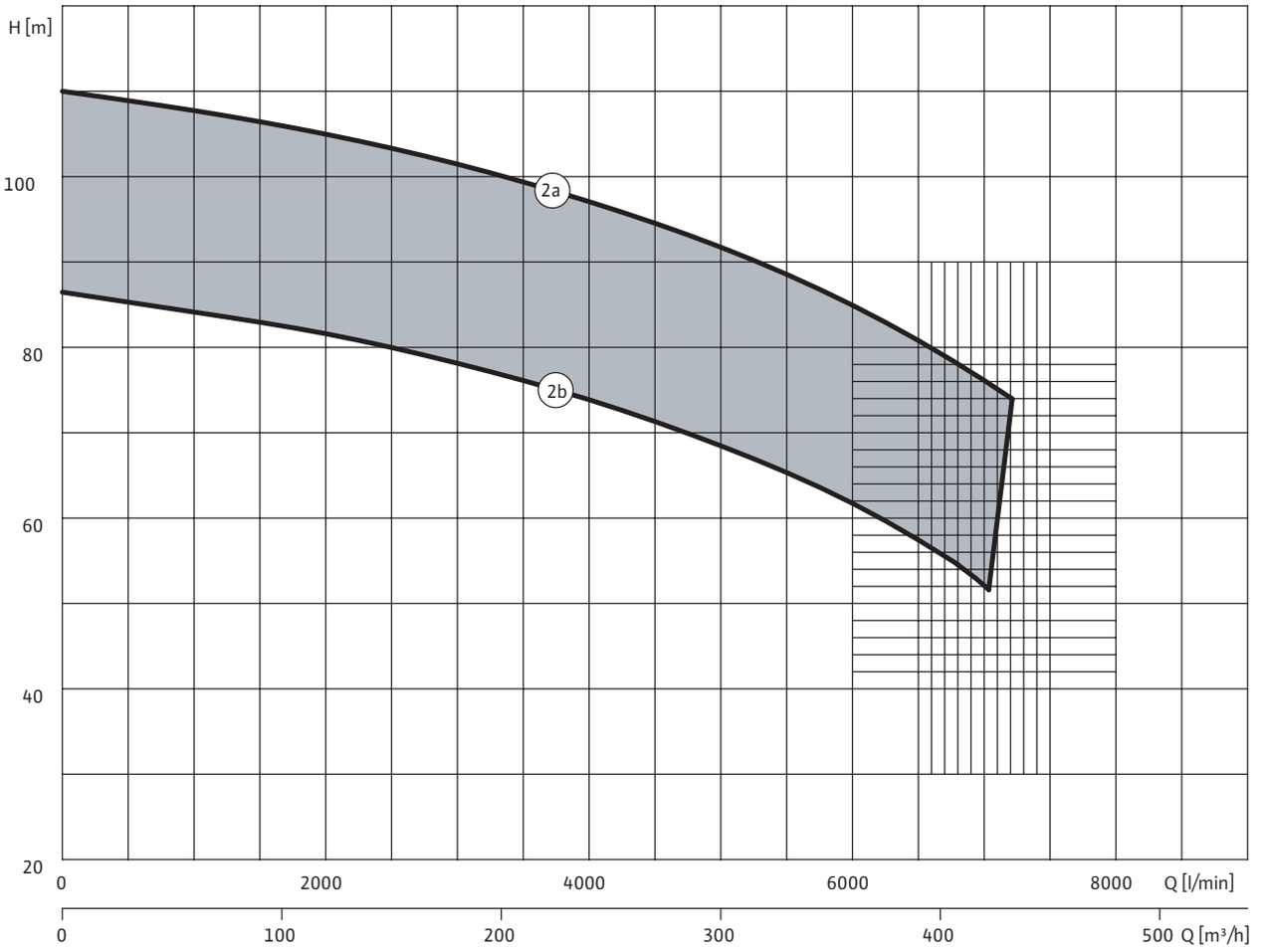


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 1300-1a	NU 911-2/60	97	196	1280	430	V+H	•	•
KM 1300S-1b	NU 911-2/50	85	168	780	260	V+H	•	•
KM 1300S-1c	NU 911-2/45	70	141	700	235	V+H	•	•
KM 1300S-1d	NU 801-2/60	53	104	580	194	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU KM 1300-2



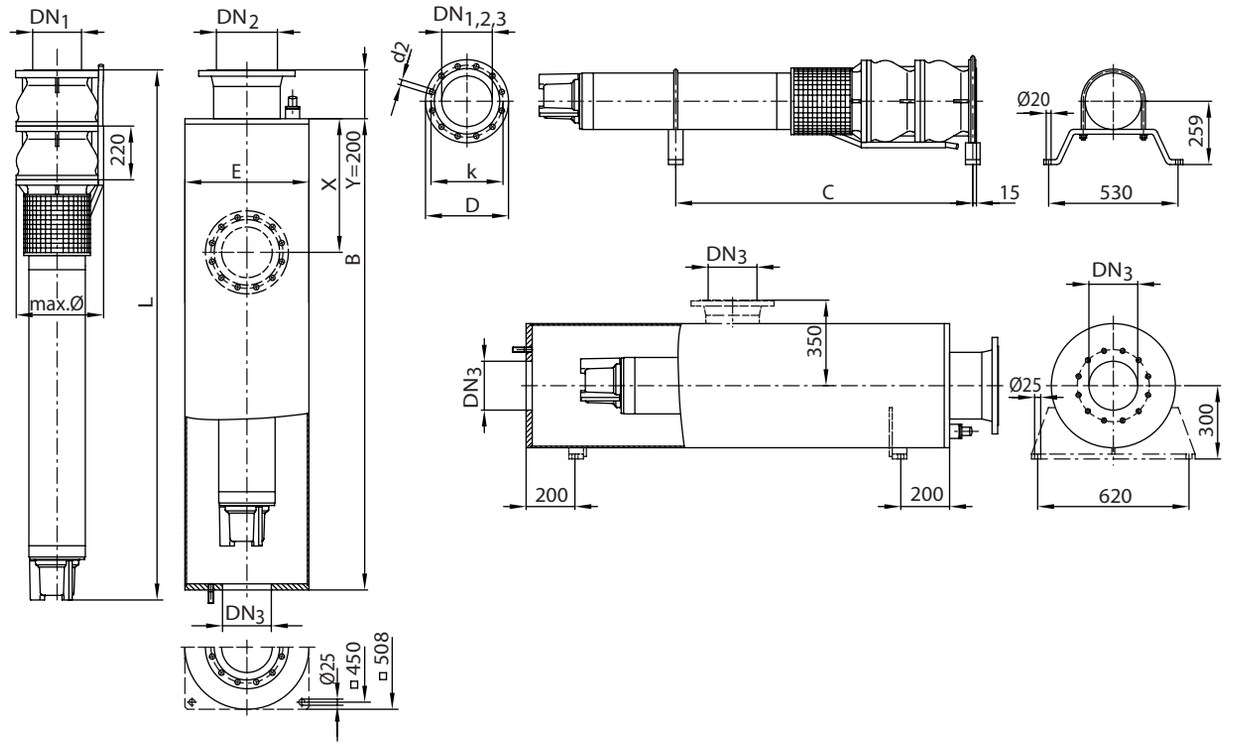
Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
KM 1300S-2a	NU 911-2/75	137	265	1790	600	V+H	•	•
KM 1300S-2b	NU 911-2/60	105	210	1280	430	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Dimension drawing

Wilo-EMU KM 1300



Dimensions, weights

Wilo-EMU...	Type of motor	Impeller diameter	Dimensions					Weight	Weight of unit
			B	*C*	*E*	*L*	*ø* [3]	*Jacket*[7]	*m*
			mm					kg	
KM 1300-1a	NU 911-2/60	239/227	2150	1240	508	1950	364	261	375
KM 1300S-1b	NU 911-2/50	230/218	2050	1190	508	1850	364	254	349
KM 1300S-1c	NU 911-2/45	217/205	2000	1170	508	1800	386	249	336
KM 1300S-1d	NU 801-2/60	200/187	1940	1130	508	1735	358	245	259
KM 1300S-2a	NU 911-2/75	217/205	2520	1540	508	2320	366 [4]	290	477
KM 1300S-2b	NU 911-2/60	200/187	2370	1460	508	2170	366	278	438

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN200 [4] Star-delta switching: Fuse protection via U1V1W1/U2V2W2 [7] Weight of pressure shroud

Flange dimensions

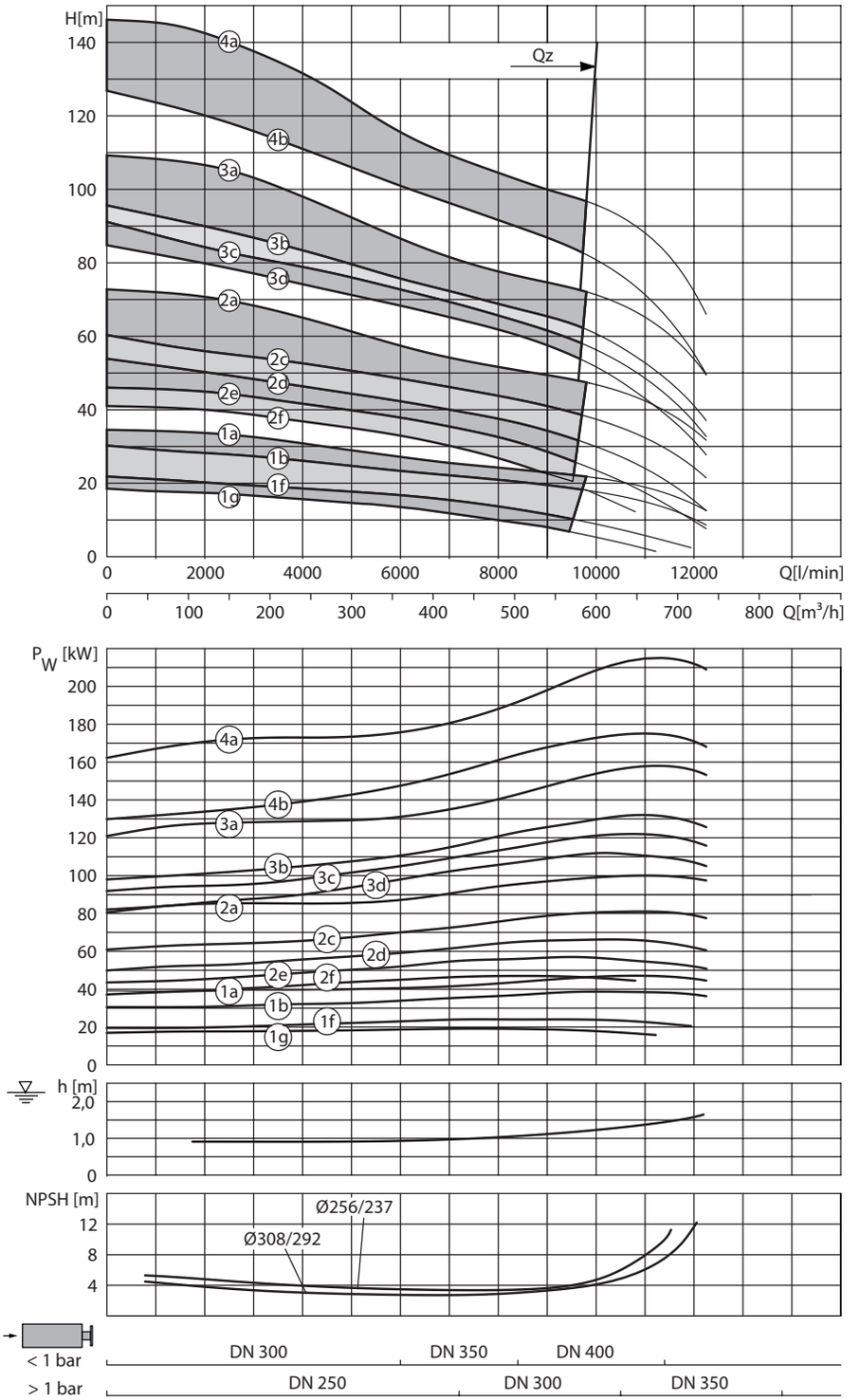
Wilo-EMU...	Connection			Pressure class			Dimensions		
	DN1	*DN2*	*DN3*	PN_1	PN_2	PN_3	*D2*	*k*	*d*
		mm			bar			mm	
KM 1300...	DN 200	DN 200	DN 200	10	10	10	8x22	295	340
KM 1300...	DN 200	DN 200	–	16	16	–	12x22	295	340
KM 1300...	DN 250	DN 250	DN 250	10	10	10	12x22	350	395
KM 1300...	DN 250	DN 250	–	16	16	–	12x26	355	405
KM 1300...	–	–	DN 300	–	–	10	12x22	400	445
KM 1300...	–	–	DN 350	–	–	10	16x22	460	505

Information for order placements

Wilo-EMU...	Type of motor	Cable cross-section	Fuse protection
		mm²	*I* A
KM 1300-1a	NU 911-2/60	7x1x25 E	315
KM 1300S-1b	NU 911-2/50	4G25 + 3x25	224
KM 1300S-1c	NU 911-2/45	4G25 + 3x25	200
KM 1300S-1d	NU 801-2/60	7x1x16 E	200
KM 1300S-2a	NU 911-2/75	7x1x50 E	200 [4]
KM 1300S-2b	NU 911-2/60	7x1x50 E	315

[3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN200 [4] Star-delta switching: Fuse protection via U1V1W1/U2V2W2 [7] Weight of pressure shroud

Overview pump curve Wilo-EMU D 500



4a = D 500-4a + U 156-4/110
4a = D 500-4a + NU 160-4/105
4b = D 500S-4b + U 156-4/84
4b = D 500S-4b + NU 160-4/90

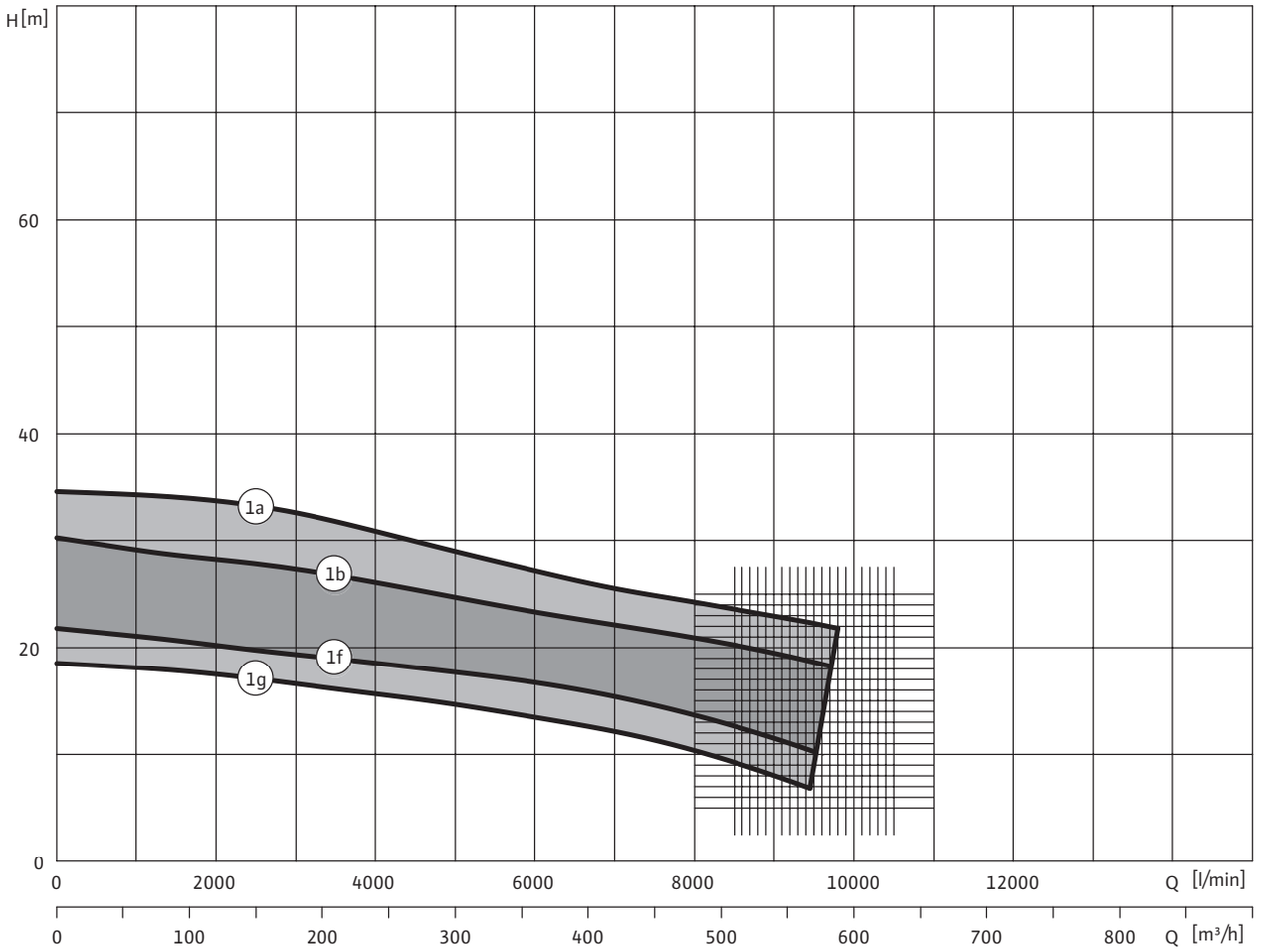
3a = D 500-3a + NU 121-4/135
3a = D 500-3a + U 156-4/84
3a = D 500-3a + NU 160-4/90
3b = D 500S-3b + NU 121-4/110
3b = D 500S-3b + U 156-4/64
3b = D 500S-3b + NU 160-4/75
3c = D 500S-3c + NU 121-4/100
3c = D 500S-3c + U 156-4/55
3c = D 500S-3c + NU 160-4/60
3d = D 500S-3d + NU 121-4/90

2a = D 500-2a + NU 121-4/90
2c = D 500S-2c + NU 121-4/65
2d = D 500S-2d + NU 911-4/90
2e = D 500S-2e + NU 911-4/75
2f = D 500S-2f + NU 911-4/60

1a = D 500-1a + NU 911-4/60
1b = D 500S-1b + NU 911-4/50
1f = D 500S-1f + NU 801-4/68
1f = D 500S-1f + NU 911-4/50
1g = D 500S-1g + NU 801-4/55

3~400 V, 50 Hz, p = 1 kg/dm³, v = 1x10⁻⁶ m²/s, ISO 9906 Annex A

Pump curves Wilo-EMU D 500-1

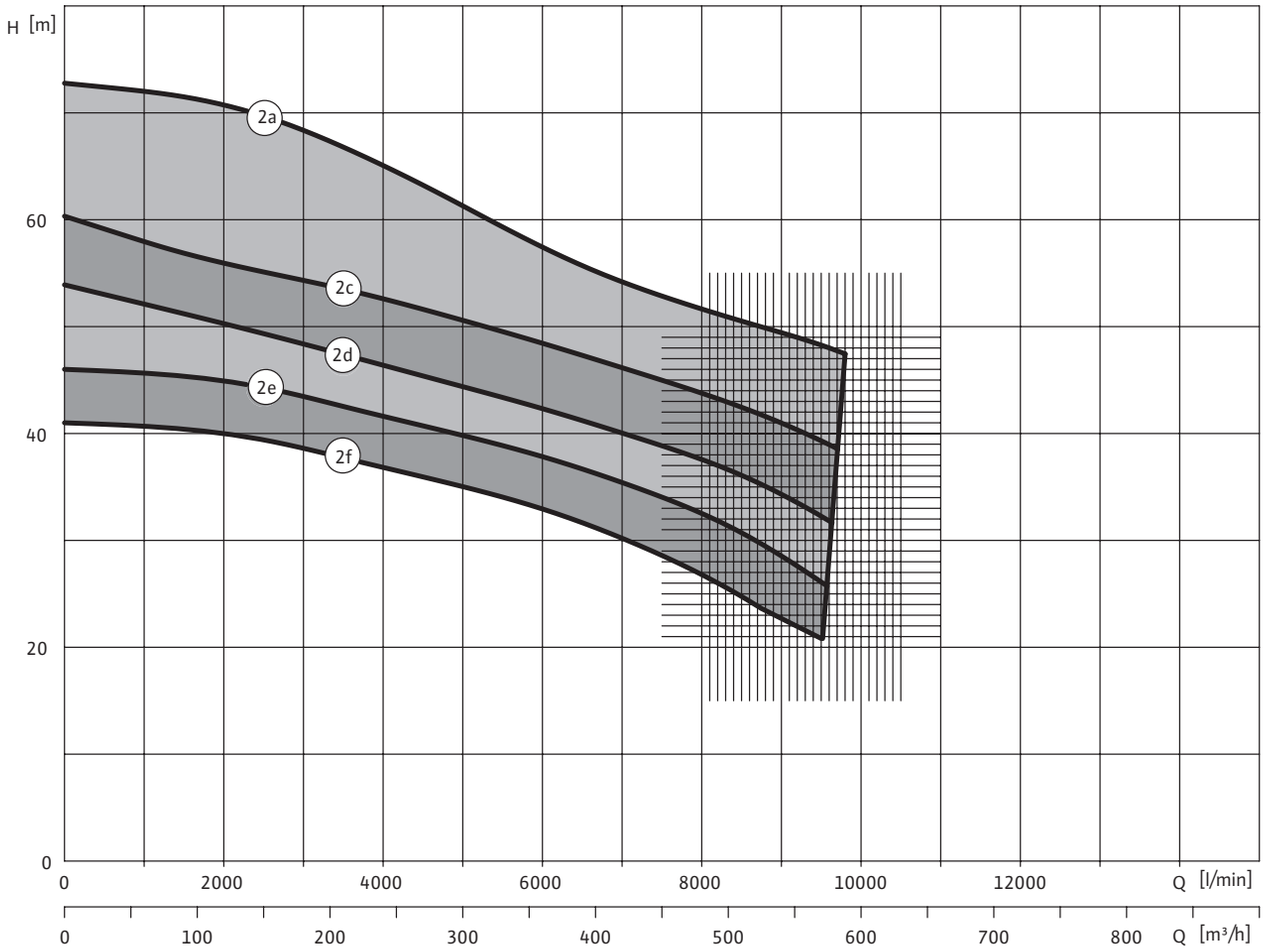


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			*A*	*C*
D 500-1a	NU 911-4/60	52	133	600	200	V+H	•	•
D 500S-1b	NU 911-4/50	42	106	490	164	V+H	•	•
D 500S-1f	NU 801-4/68	26	60	365	122	V	•	•
D 500S-1f	NU 911-4/50	42	106	490	164	V+H	•	•
D 500S-1g	NU 801-4/55	21	48	290	97	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU D 500-2

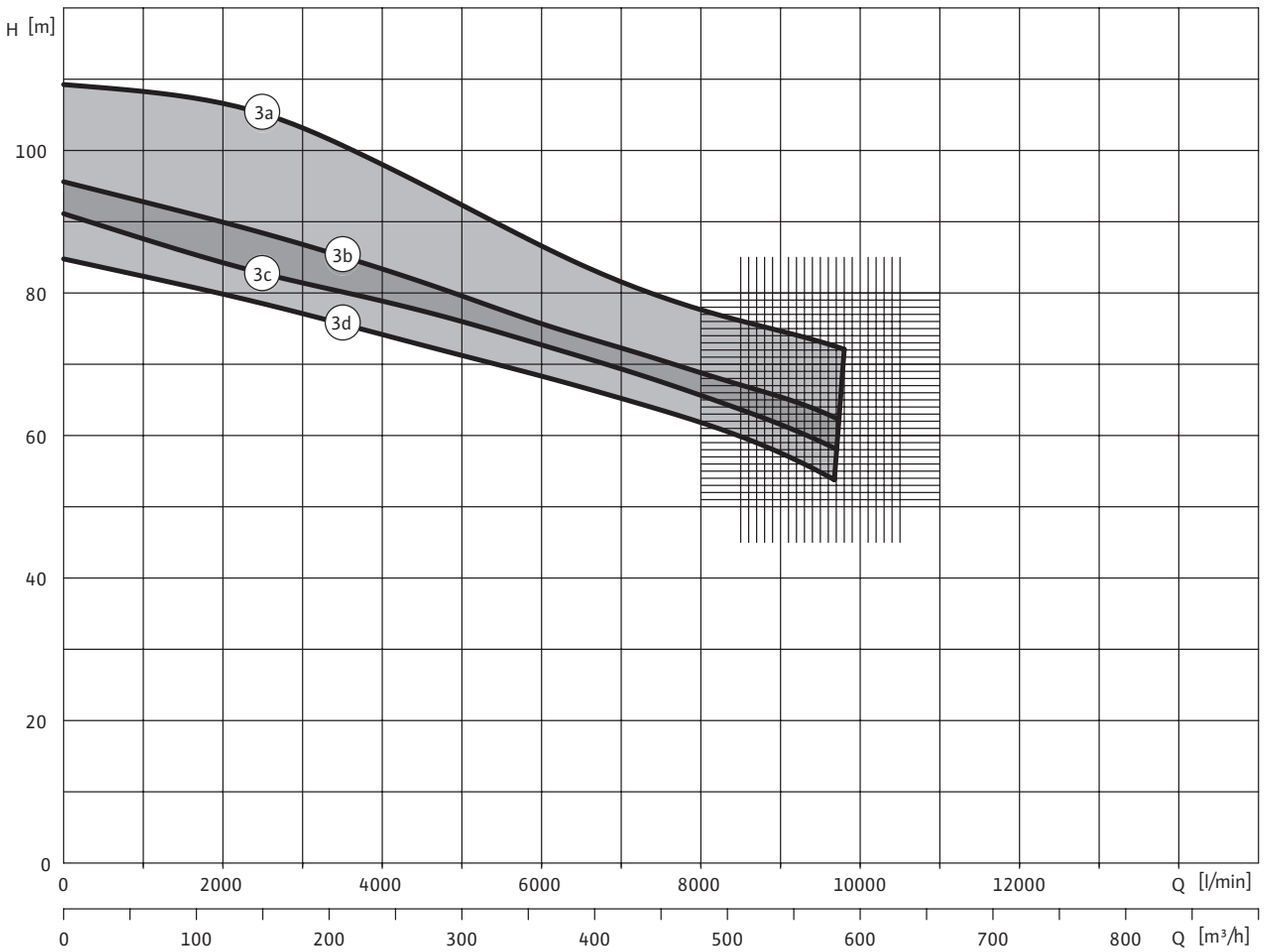


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
D 500-2a	NU 121-4/90	118	245	1380	460	V+H	•	•
D 500S-2c	NU 121-4/65	88	185	1000	335	V+H	•	•
D 500S-2d	NU 911-4/90	73	187	820	275	V+H	•	•
D 500S-2e	NU 911-4/75	62	156	700	235	V+H	•	•
D 500S-2f	NU 911-4/60	52	133	600	200	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU D 500-3

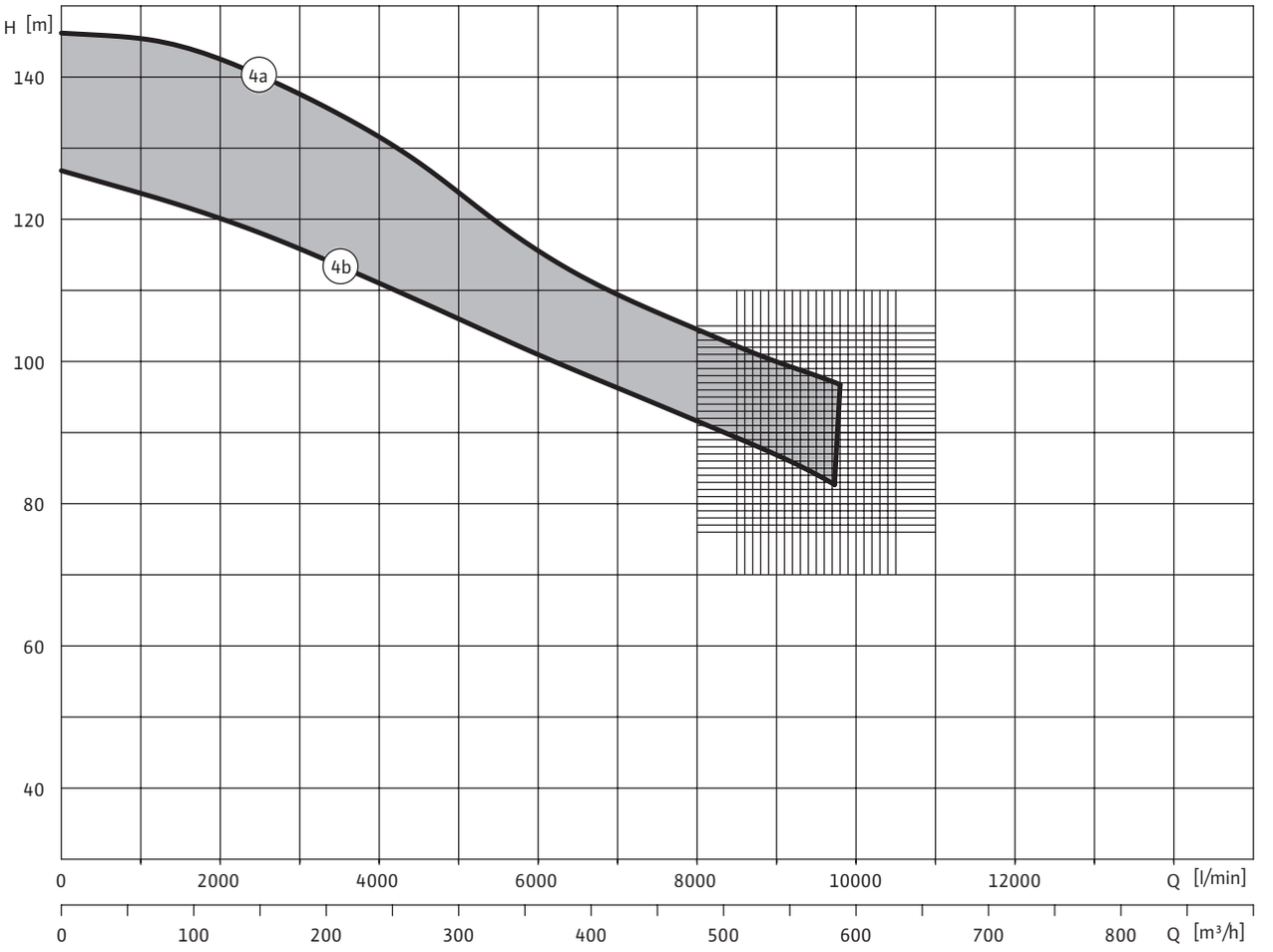


Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
D 500-3a	NU 121-4/135	172	365	2000	670	V	•	•
D 500-3a	U 156-4/84	185	375	2300	770	V+H	•	•
D 500-3a	NU 160-4/90	185	385	2570	860	V+H	•	•
D 500S-3b	NU 121-4/110	148	305	1700	570	V	•	•
D 500S-3b	U 156-4/64	148	300	1700	570	V+H	•	•
D 500S-3b	NU 160-4/75	148	310	2200	740	V+H	•	•
D 500S-3c	NU 121-4/100	133	290	1560	520	V	•	•
D 500S-3c	U 156-4/55	129	260	1400	470	V+H	•	•
D 500S-3c	NU 160-4/60	129	270	1750	590	V+H	•	•
D 500S-3d	NU 121-4/90	118	245	1380	460	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Pump curves Wilo-EMU D 500-4



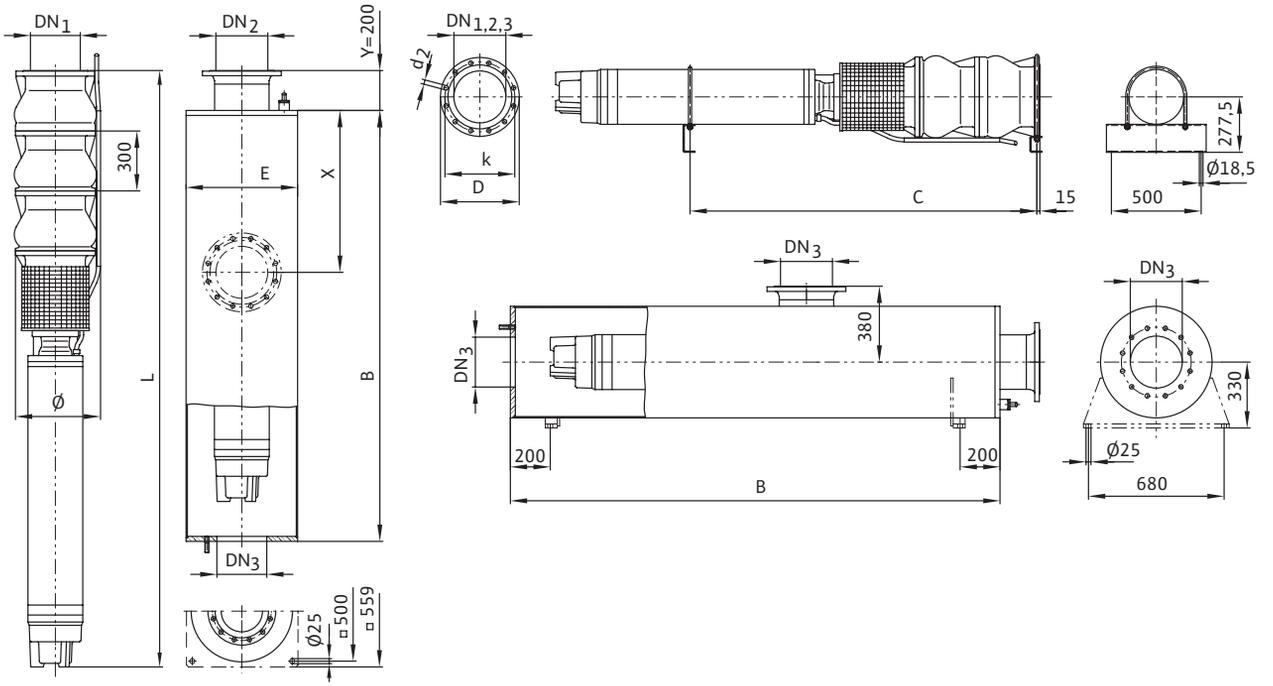
Motor data

Wilo-EMU...	Type of motor	Rated power	Rated current	Starting current – direct	Starting current – star-delta	Installation	Material code	
		P_2 kW	I_N	I_A A			A	C
D 500-4a	U 156-4/110	235	475	2850	950	V	•	•
D 500-4a	NU 160-4/105	235	485	3100	1040	V+H	•	•
D 500S-4b	U 156-4/84	185	375	2300	770	V	•	•
D 500S-4b	NU 160-4/90	185	385	2570	860	V+H	•	•

For star/delta starting, max. current peak during the switching phase; after reducing the compensatory processes and a switching phase of 80 ms. Please request a starting diagram when configuring power generators!

Dimension drawing

Wilo-EMU D 500



Dimensions, weights

Wilo-EMU...	Type of motor	Impeller diameter	Dimensions					Weight	Weight of unit
			B	*C*	*E*	*L*	*ø* [3]	*Jacket*[7]	*m*
			mm					kg	
D 500-1a	NU 911-4/60	308/292	2370	1400	559	2113	460	345	460
D 500S-1b	NU 911-4/50	300/284	2270	1350	559	2013	432	336	434
D 500S-1f	NU 801-4/68	270/252	2230	–	559	1978	448	333	358
D 500S-1f	NU 911-4/50	270/252	2270	1350	559	2013	432	336	434
D 500S-1g	NU 801-4/55	256/237	2100	1260	559	1848	442	323	336
D 500-2a	NU 121-4/90	308/292	3190	1960	559	2933	465	415	890
D 500S-2c	NU 121-4/65	295/278	2940	1840	559	2683	454	394	800
D 500S-2d	NU 911-4/90	290/273	2970	1850	559	2713	460	397	648
D 500S-2e	NU 911-4/75	280/262	2820	1770	559	2563	439	384	609
D 500S-2f	NU 911-4/60	270/252	2670	1700	559	2413	460	371	570
D 500-3a	NU 121-4/135	308/292	3940	–	559	3687	472	481	1191
D 500-3a	U 156-4/84	308/292	3460	2260	559	3202	5454	439	1322
D 500-3a	NU 160-4/90	308/292	3700	2370	559	3440	458 [1]	459	1484
D 500S-3b	NU 121-4/110	300/284	3690	–	559	3433	464	459	1070
D 500S-3b	U 156-4/64	300/284	3250	2160	559	2998	454	422	1178
D 500S-3b	NU 160-4/75	300/284	3540	2260	559	3226	444 [1]	446	1372
D 500S-3c	NU 121-4/100	295/278	3590	–	559	3333	464	450	1035
D 500S-3c	U 156-4/55	295/278	3160	2110	559	2908	454	414	1113
D 500S-3c	NU 160-4/60	295/278	3330	2190	559	3076	440 [1]	430	1267
D 500S-3d	NU 121-4/90	290/273	3490	2260	559	3233	464	441	1000
D 500-4a	U 156-4/110	308/292	–	–	–	3762	465	–	1619
D 500-4a	NU 160-4/105	308/292	4140	2750	559	3890	464 [1]	498	1698
D 500S-4b	U 156-4/84	300/284	–	–	–	3502	458	–	1432
D 500S-4b	NU 160-4/90	300/284	3990	2680	559	3740	458 [1]	491	1594

[1] ATTENTION: For NU 160 no star triangle starting possible [3] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN200 [7] Weight of pressure shroud

Flange dimensions

Wilo-EMU...	Connection	Female/male thread	Connection		Pressure class			Dimensions		
	DN1		*DN2*	*DN3*	PN_1	PN_2	PN_3	*D2*	*k*	*d*
	mm	–	mm		bar			mm		
D 500...	DN 250	–	DN 250	DN 250	10	10	10	12x22	350	395
D 500...	DN 250	–	DN 250	–	16	16	–	12x26	355	405
D 500...	–	–	–	DN 300	–	–	10	12x22	400	445
D 500...	–	–	–	DN 350	–	–	10	16x22	460	505
D 500...	–	–	–	DN 400	–	–	10	16x26	515	565

Information for order placements

Wilo-EMU...	Type of motor	Cable cross-section	Fuse protection
		mm²	*I* A
D 500-1a	NU 911-4/60	4G25 + 3x25	200
D 500S-1b	NU 911-4/50	4G16 + 3x16	160
D 500S-1f	NU 801-4/68	4G10 + 3x10	125
D 500S-1f	NU 911-4/50	4G16 + 3x16	160
D 500S-1g	NU 801-4/55	4G10 + 3x10	100
D 500-2a	NU 121-4/90	7x1x35 E	355
D 500S-2c	NU 121-4/65	7x1x25 E	315
D 500S-2d	NU 911-4/90	4G25 + 3x25	224
D 500S-2e	NU 911-4/75	4G25 + 3x25	200
D 500S-2f	NU 911-4/60	4G25 + 3x25	200
D 500-3a	NU 121-4/135	7x1x50 E	500
D 500-3a	U 156-4/84	7x1x70 E	630
D 500-3a	NU 160-4/90	7x1x70 E[1)]	630 [1)]
D 500S-3b	NU 121-4/110	7x1x35 E	400
D 500S-3b	U 156-4/64	7x1x35 E	400
D 500S-3b	NU 160-4/75	4x1x120 E	500 [1)]
D 500S-3c	NU 121-4/100	7x1x35 E	400
D 500S-3c	U 156-4/55	7x1x35 E	355
D 500S-3c	NU 160-4/60	4x1x95 E[1)]	400 [1)]
D 500S-3d	NU 121-4/90	7x1x35 E	355
D 500-4a	U 156-4/110	7x1x120 E	800
D 500-4a	NU 160-4/105	7x1x95 E[1)]	800 [1)]
D 500S-4b	U 156-4/84	7x1x70 E	630
D 500S-4b	NU 160-4/90	7x1x70 E[1)]	630 [1)]

[1)] ATTENTION: For NU 160 no star triangle starting possible [3)] For power cable in accordance with I_N (Y/Δ), max. ø for flange connection DN200 [7)] Weight of pressure shroud