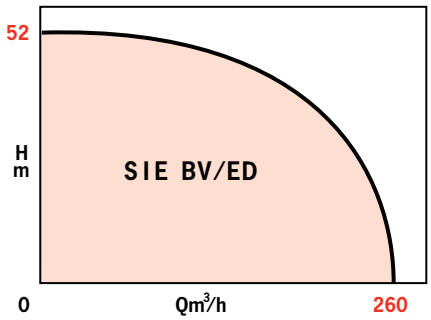
OPERATING LIMITS

Flow rates up to:	**260 m³/h**
Head up to:	**52 m**
Max. discharge pressure:	
	13 bar up to +140°C
	16 bar up to +120°C
Temperature range:	**–20° to +140°C**
Max. ambient temperature:	**+ 40°C**
Flanges ND:	**65 to 100**

SIE BV/ED

SINGLE HEAD PUMPS IN-LINE ELECTRONIC CONTROL

Heating - Air conditioning S.H.W. 50 & 60 Hz



APPLICATIONS

Pumps designed to circulate cold or hot water free from abrasive residues in heating, hot domestic supply water, cold and iced water systems and irrigation systems.
If additives are used, such as glycol or oil, check that the seals are suitable and whether or not the flow rate needs to be adjusted (for a glycol volume of upwards of 10%).

• Approved fluids:

- Heating water to VDI 2035	●
- Service water - chilled/condenser water	●
- Water/glycol-mixtures[1)]	●
- Heat transfer fluids	❍
Other media on request	❍

Performance
Speed range: 1100 -2900 rpm.
Infinitely-variable speed control.

● Standard design
❍ Special design at extra cost

1) Applies to 20 - 40 % vol. glycol content and up to 40° C fluid temperature.

N.T. N° 124-10/ENG. - Ed.3/05-05

SIE BV/ED

ADVANTAGES

- **ENERGY SAVINGS**
  Pumps duty point optimization. Up to 50% energy savings compare to standard pumps.
- **NOISE CONTROL**
  Whistling and noise elimination at thermostatic valves.
  Automatic speed adaptation for comfort needs.
- **RELIABILITY**
  The working principle is fully automatic and doesn't require any maintenance/venting of the sensor.
  Electronic module fitted with a non-volatile memory for data storage in case of electricity shortage.
  Protection enclosure IP 54 for motor + module in case of dust and humid surrounding.
- **SIMPLICITY**
  Fully automatic working.

NB
NPSH curves shown are based on tested data. A safety margin of not less than 0.5 m should be added.

FEATURES

- **Packaging**

The pump, the packaging and the assembly and instruction manual are included as standard.

- **Accessories**

- Support brackets for base mounting.
- Filter for unrestricted distribution class according to IEC 61800-3, class B1.

STANDARD CONSTRUCTION

Main parts	Material	
Pump	EN-GJL 250 [3]	●
Impeller	EN-GJL 200 [4]	●
	G-CuSn 5	❍
Lantern	EN-GJL-250 [3]	●
Shaft	1.4122/X39CrMo17-1	●
Mechanical seal	Graphite/Si carbide/EP	

❍ *Other mechanical seals on request.*

ELECTRICAL DATA

- **Mains power supply**

3~400 V, 50 Hz	●
3~380 V, 60 Hz	●

- **Motor**

Three-phase squirred cage electric motor
Performance and frames to IEC 38

Integrated thermistor sensors (thermistor)	●
Protection index	IP 54 ●
Insulating category	F ●
EMC	
Emission	EN 61800-3
Immunity	EN 61800-3

The standard model complies with the limit values in the first environment, with restricted distribution only.

Filter for unrestricted distribution class according to IEC EN 61800-3 class B1, for base mounting ❍

Protection differential (FI)
Selective "all current" FI differential circuit breakers are permitted
(> 300 mA trip rating).

Sigle FI

INSTALLATION

In-line pumps series SIE…BV/ED are designed for a direct pipe mounting with motor upwards (all types) or motor horizontal (≤ 15 kW).
Motor or module facing downwards is not allowed.
Keep a sufficient space to remove easily the motor, in case of maintenance.

MOUNTING POSITIONS

- Pipe supported	●
- Brackets or base mounted	❍
Flanges PN 16/EN 1092-2	●

● Standard design
❍ Special design at extra cost

1) Applies to 20 - 40 % vol. glycol content and up to 40° C fluid temperature.
2) Applicable for water/glycol mixtures differing from those referred in 1)
3) Previously Ft 25, corrosion proof
4) Previously Ft 20.

DESIGN

- **Hydraulic part**

In-line single-stage low pressure centrifugal pump with suction and discharge flanges of the same nominal diameter, with an air-cooled motor. NP 16 holed flanges compliant with EN 1092-2.
G 1/8 pressure gauge couplings used for the built-in differential pressure sensor (BV version).
Pumps with cast-on supports for optional base mounting, designed for max. working pressure of 16 bars.
Pump shaft and motor shaft are connected by a clamp coupling. Pump housing and impeller are in cast iron.
The mechanical seal does not require maintenance and is independent of the rotation direction. It is suitable for pure water of a temperature up to 140°C and water/glycol mixtures of a volume up to 40% and a maximum temperature of 40°C. Special seals and sealing materials are available for other uses.

- **Motor protection**

Integrated full overload protection by PTC thermal sensor in all stator windings.
IP 54 - Class F.

PUMP EQUIPMENT

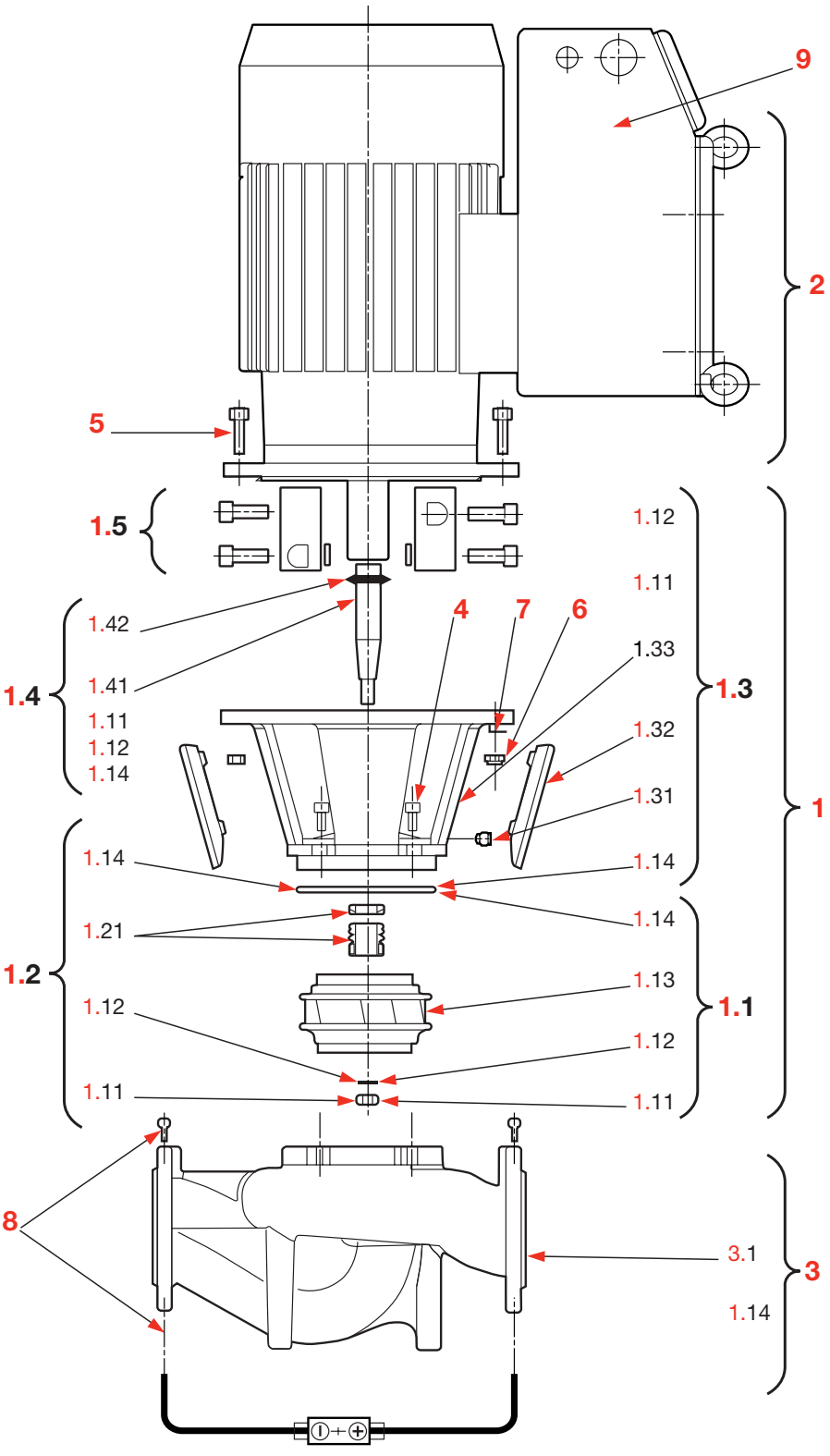
- **Pump equipment SIE...BV**

- Pump integrated ΔP-c mode for constant head control, with differential pressure sensor.
- Manual setting of the speed (touch pads ⊕/⊖ integrated)
- External ON/OFF
- Collective Fault signal (pot. free contacts)
- Collective Run signal (pot. free contacts)
- LED: mains on ϟ
  pump running ↻
  fault ⑂
- "Reset" button (Fault eliminated) ⓜ

- **Pump equipment SIE...ED**

- External drive of the pump, from a BMS, without integrated differential pressure sensor.
- External setting of the speed (through an analogous signal 0 - 10 V or 4 - 20 mA).
- ΔP constant or variable through an external sensor (not supplied) and analogous signal (0 - 10 V or 4 - 20 mA),
- External ON/OFF.
- Collective Fault signal (pot. free contacts).
- Collective Run signal (pot. free contacts).
- LED: mains on ϟ
  pump running ↻
  reset button ⑂
- "Reset" button (Fault eliminated) ⓜ

DESCRIPTION VIEW



PARTS LIST

1. Complete exchange batch
- **1.1** Hydraulic kit with
  - 1.11 Nut
  - 1.12 Washer
  - 1.13 Impeller
  - 1.14 O-ring
- **1.2** Kit mechanical seal with
  - 1.21 Complete mechanical seal
- **1.3** Lantern kit parts with
  - 1.31 Bleed screw
  - 1.32 Coupling protector
  - 1.33 Lantern
- **1.4** Kit shaft with
  - 1.41 Shaft
  - 1.42 Spring stop cellar
- **1.5** Complete coupling

2. Motor

3. Complete pump casing kit with
- 3.1 Pump
- 3.2 Stopper for pressure ports

4. Mounting screw for lantern/pump

5. Mounting screw for motor/lantern

6. Nut for motor/lantern mounting

7. Washer for motor/lantern mounting

8. Differential pressure sensor with pipe (version BV).

9. Motor module.

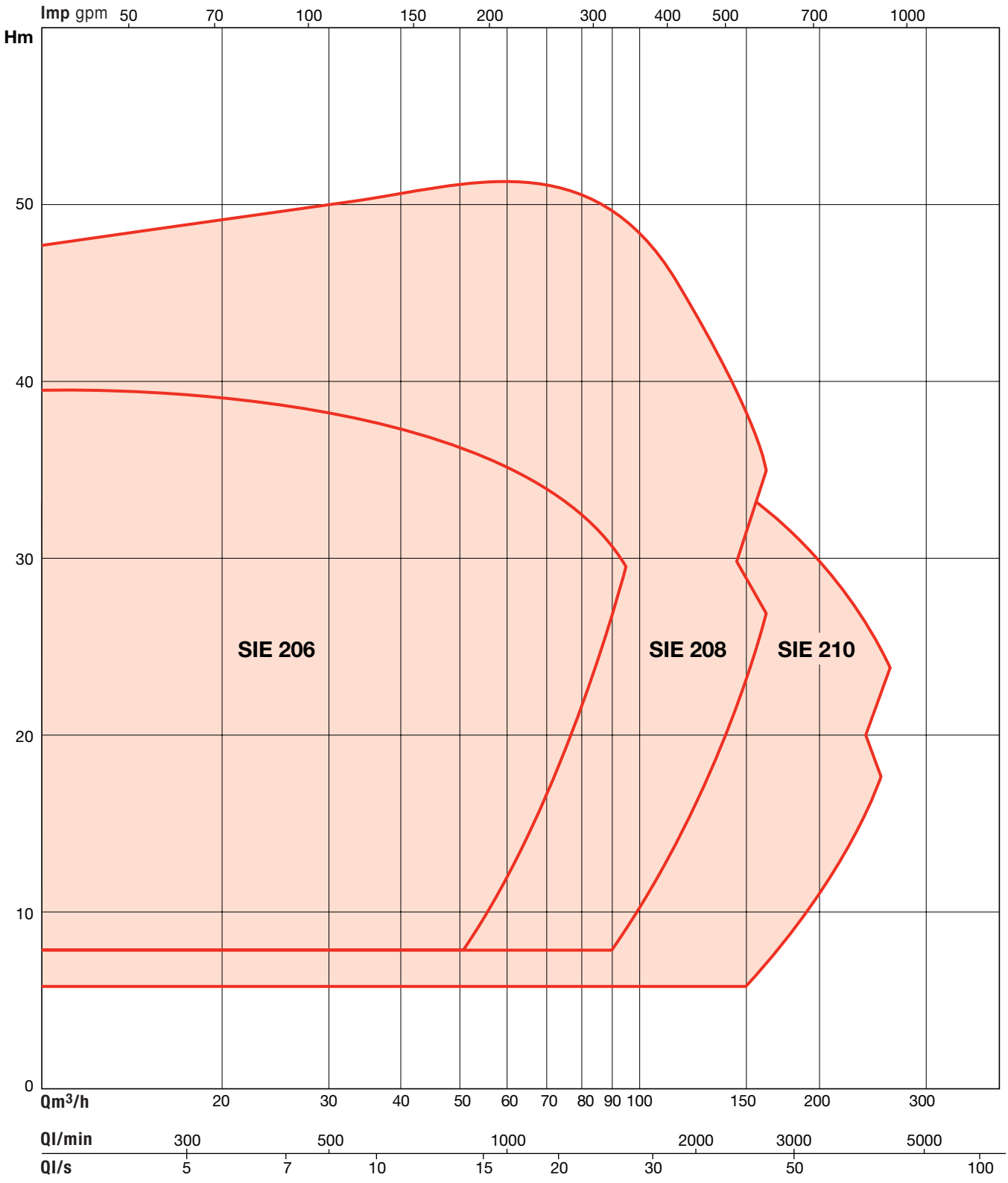
IDENTIFICATION

SIE 2 06 - 17/11 BV ED

- SIE: pump code
- 2 pole motor
- Nominal dia. of ports in cm
- Nominal dia. of impeller in cm
- Rated power in kW
- Basis functions
- Without differential pressure sensors allowing the external adjusting of the setpoint

SIE BV/ED

GENERAL PRESELECTION GRAPHS - 2 POLE - 50Hz



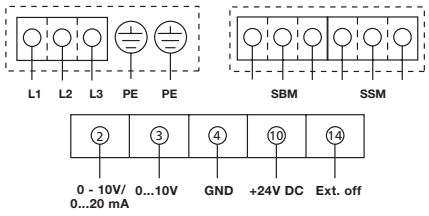
FUNCTIONS CHART SIE...BV/ED

Functions	Single head pumps SIE...BV	Single head pumps SIE...ED
Mains power		
3~400V, ± 10%, 50 Hz	●	●
3~380V, ± 6%, 60 Hz	●	●
Manual function		
Adjusting of the differential pressure setpoint	●	—
Speed selection (manual control)	●	—
Automatic function		
Infinitely variable speed control Δp-c	●	—
Speed setting	●	—
Full motor protection with trip function	●	●
Remote controlled function		
External setting of the speed via "0 ... 10V" or "0 - 20 mA" signal	—	●
External setting of the differential pressure via "0 ... 10V" or "0 - 20 mA" signal	—	●
Input of the measured differential pressure from an external sensor via "0 ... 10V[1)]" signal	●	●
External On/Off	●	●
Signal and display function		
Collective Run signal volt-free contacts	●	●
Collective Faults signal volts-free contacts	●	●
Fault light	●	●

● available - 1) For SIE..ED, an external sensor has to be foreseen (not supplied with the pump).

WIRING DIAGRAM

Three-phase motor 3~400V, 50Hz/380V, 60 Hz



Switch rating of volt-free contacts for collective Run and Fault signals:

- min. 12 V DC/ 10 mA

- max. 250 V AC/1 A

L1,L2,L3,PE : Power supplied 3~400V - 50 Hz – 3~380V - 60 Hz

SBM : Volt-free common Run signal

SSM : Volt-free common Fault signal

2 : Analogue input (0 - 10V) for duty point

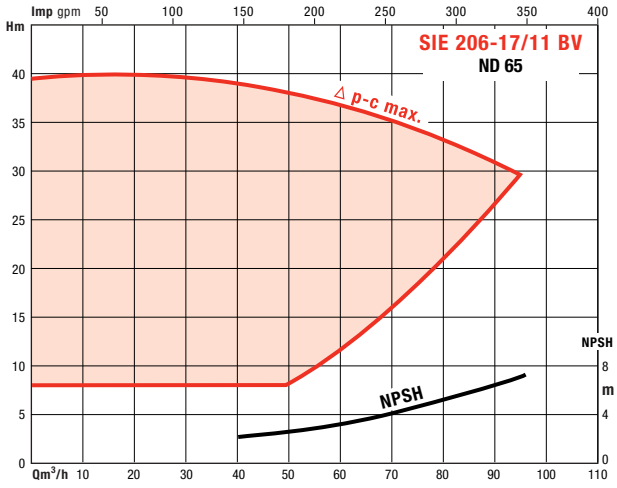
3 : Analogue input (0-10 V) for diff. pressure

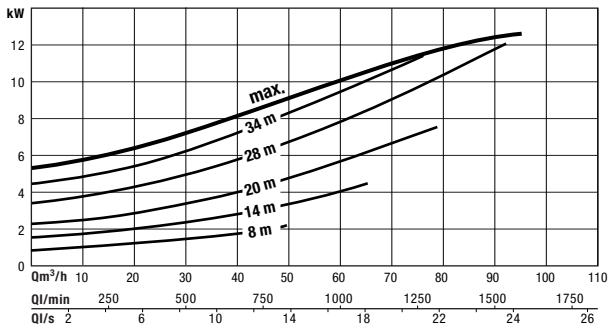
4 : Sensor/analogue signal ground

10 : Analogue output (24V) for external use

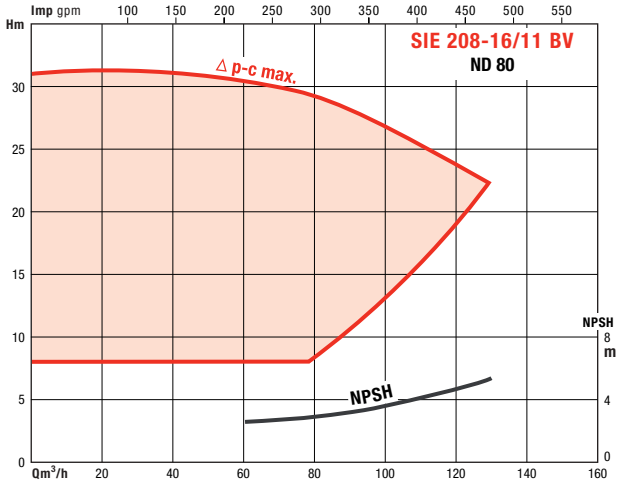
14 : Ext.-Off: remote on/off

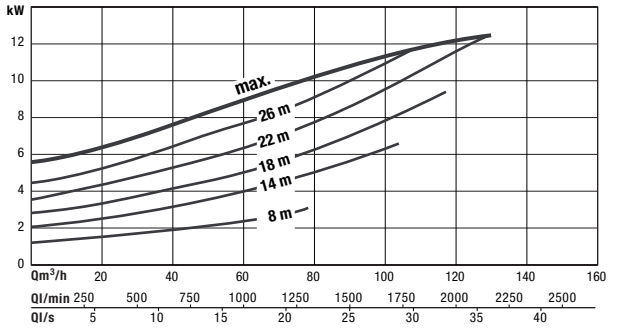
Curves 2900 rpm **Δ p-c (constant)**

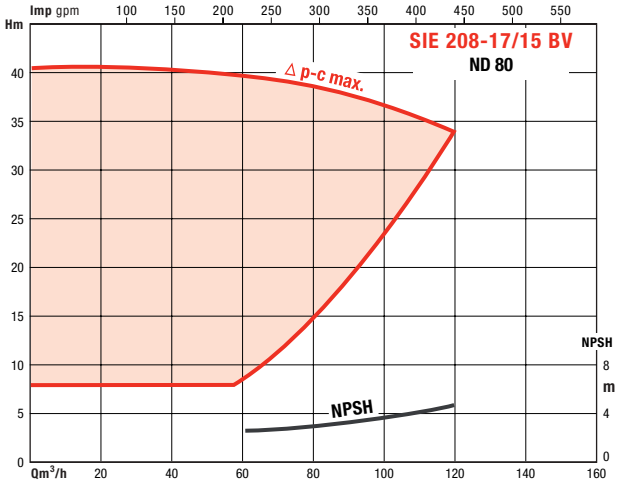


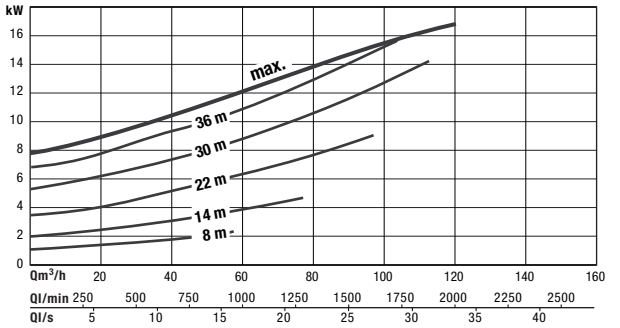


SIE BV/ED



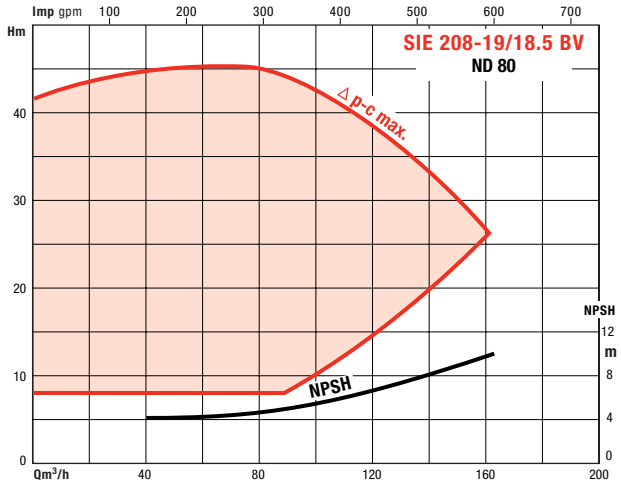


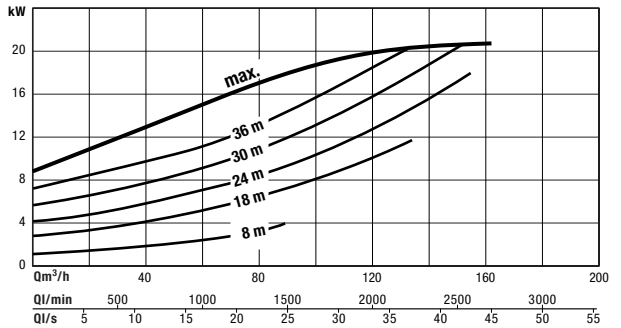


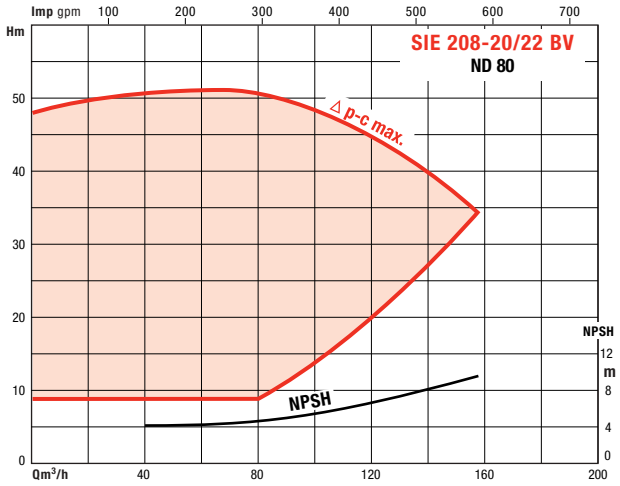


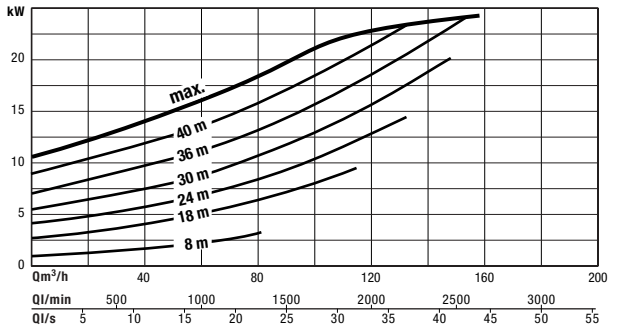
Curves 2900 rpm

Δ p-c (constant)









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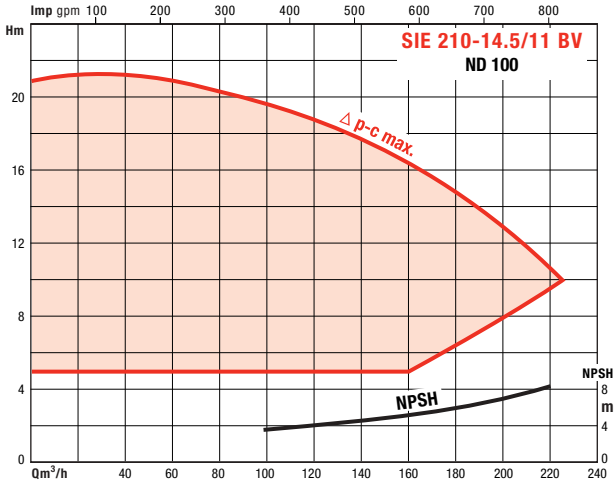
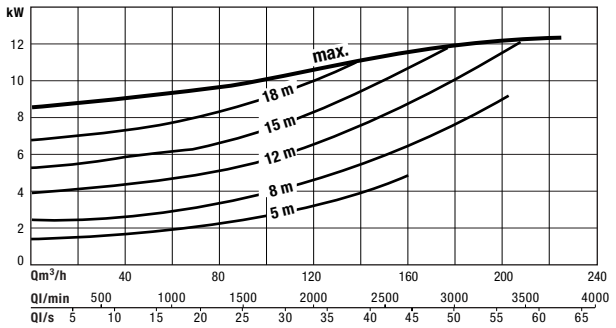
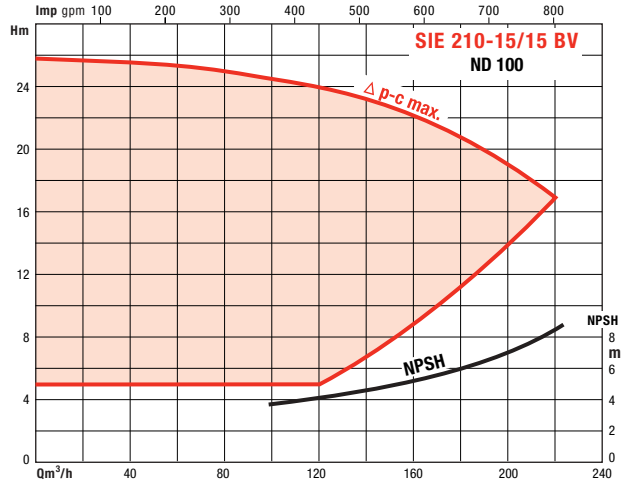
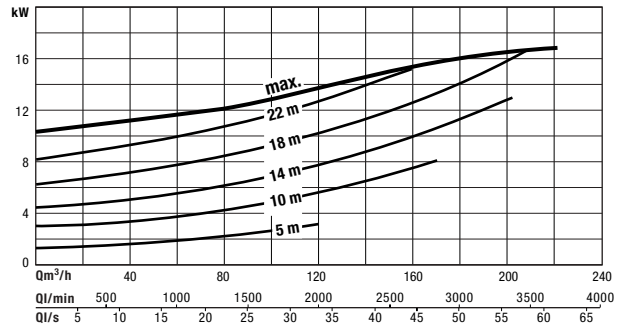


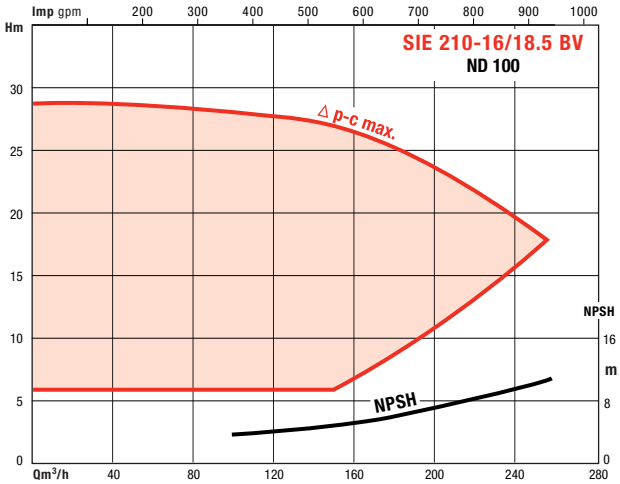


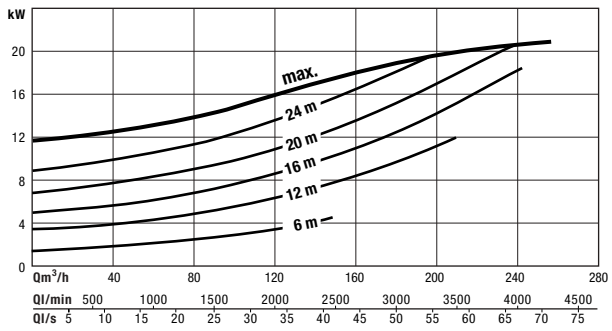


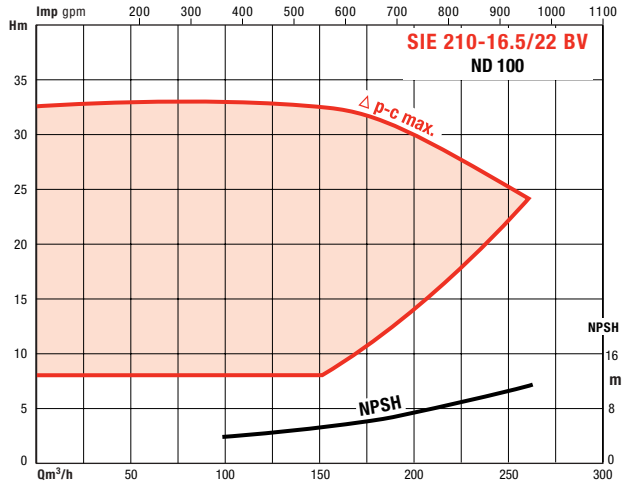


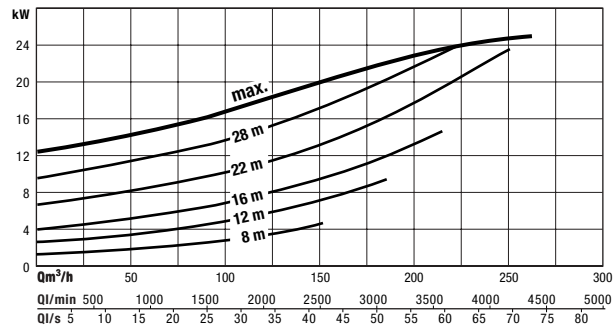
Curves 2900 rpm

Δ p-c (constant)





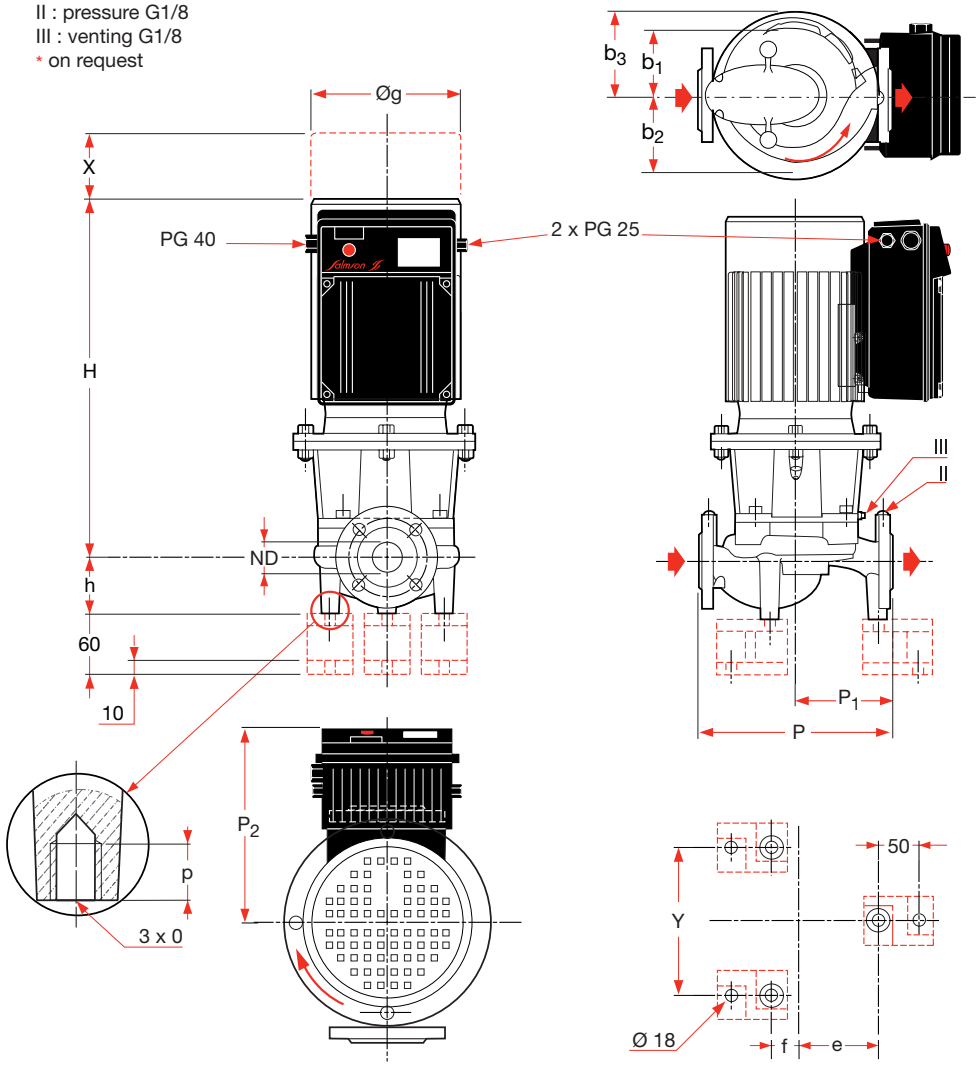




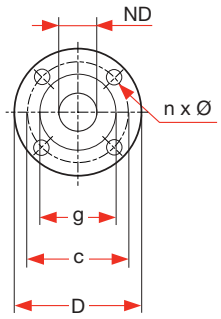
SIE BV/ED

ELECTRICAL AND DIMENSIONAL CHARACTERISTICS

II : pressure G1/8
III : venting G1/8
* on request



Suction-discharge flanges PN16 - EN 1092-2



ND	D	c	g	holes
	mm	mm	mm	n x Ø
65	185	145	118	4 x 19
80	200	160	132	8 x 19
100	220	180	156	8 x 19

ORDER REFERENCE	MOTOR					PUMP															
	P2	Speed	Power input P1 max. current	Nominal	ND ports	P	h	b_1	b_2	b_3	Y	e	f	Øg	H	P_1	O	p	P_2	X	mass
	kW	rpm	kW	in A		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
SIE 206-17/11	11	1164-2909	12.8	20	65	430	110	126	146	175	180	195	60	306	750	215	M12	20	375	120	173
SIE 208-16/11	11	1164-2909	12.8	20	80	440	120	136	162	175	180	173	72	319	747	200	M12	20	375	120	182
SIE 208-17/15	15	1168-2920	17	26.7	80	440	120	136	162	175	180	173	72	319	747	200	M12	20	405	120	199
SIE 208-19/18.5	18.5	1166-2915	21	32.5	80	500	145	157	182	175	220	208	62	319	833	230	M12	20	390	120	255
SIE 208-20/22	22	1170-2925	25	39.4	80	500	145	157	182	175	220	208	62	358	873	230	M12	20	430	120	286
SIE 210-14.5/11	11	1164-2909	12.8	20	100	500	120	159	197	175	200	226	60	319	782	250	M12	20	375	135	195
SIE 210-15/15	15	1168-2920	17	26.7	100	500	120	159	197	175	200	226	60	319	782	250	M12	20	400	135	212
SIE 210-16/18.5	18.5	1166-2915	21	32.5	100	500	120	159	197	175	200	226	60	319	782	250	M12	20	390	135	255
SIE 210-16.5/22	22	1170-2925	25	39.4	100	500	120	159	197	175	200	226	60	358	906	250	M12	20	430	135	286

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