

NR(D)

In-line Pumps

n ≈ 2900 rpm
n ≈ 1450 rpm



Construction

Close-coupled, single-impeller, centrifugal pumps; electric motor with extended shaft directly connected to the pump.

NR, NR4: Single head pump.

NRD: Twin head pump with built-in automatic switching valve. the two head can operate singularly or in parallel.

Pump casing with suction and delivery connections with the same diameter and on the same axis (in-line).

Connections: Flanges PN 10, EN 1092-2.

Counterflanges (on request)

Sizes	Flanges
NR, NR4 32, 40, 50, 65	Screwed flanges PN 16, EN 1092-1
NRD 65	
NR4 100, NR4 125	Flanges for welding PN 10, EN 1092-1

Version with frequency converter (on request)

Applications

For clean liquids, without abrasives, which are non-aggressive for the pump materials (contents of solids up to 0.2%).

For heating, conditioning, cooling and circulation plants.

For civil and industrial applications.

When low noise operation is required (n ≈ 1450 rpm).

Operating conditions

Liquid temperature from -10 °C to +90 °C.

Ambient temperature up to 40 °C.

Total suction lift up to 7 m.

Maximum permissible working pressure up to 10 bar.

Continuous duty.

Motor

2-pole induction motor, 50 Hz (n ≈ 2900 rpm).

NR(D) : three-phase 230/400 V ± 10% up to 3 kW;
400/690 V ± 10% from 4 to 18,5 kW.

NRM : single-phase 230 V ± 10%.

4-pole induction motor, 50 Hz (n ≈ 1450 rpm).

NR4 : three-phase 230/400 V ± 10% up to 3 kW;
400/690 V ± 10% for 4 kW.

NRM4 : single-phase 230 V ± 10%.

Insulation class F.

Protection IP 54.

Motor suitable for operation with frequency converter from 0,75 kW for NR4 and from 1,1 kW for NR(D).

Classification scheme IE3 for three-phase motors from 0,75 kW.

Constructed in accordance with EN 60034-1, EN 60034-30-1.
EN 60335-1, EN 60335-2-41.

The electropumps NR, NR4 series comply with the European Regulation no. 547/2012.

Materials

Component	Material
Pump casing Lantern bracket	Cast iron GJL 200 EN 1561
Impeller	Cast iron GJL 200 EN 1561 (Brass P-Cu Zn Pb 2 EN 1982 for NR-NR4 32..., 40..., 50/200)
Shaft	Chrome steel AISI 430 (Chrome-nickel steel AISI 303 for pumps with dimensions AD=128 mm or AD=286 mm, see page for dimensions)
Mecanical seal	Carbon - Ceramic - NBR
Counterflanges	Steel Fe 42 UNI 7070

Special features on request

- Other voltages.
- Protection IP 55.
- Frequency 60 Hz
- Special mechanical seal.
- Higher or lower liquid or ambient temperatures.
- Motor suitable for operation with frequency converter up to 0,55 kW for NR4 and up to 0,75 kW for NR.

NR(D) EI

In-line Pumps



Pumps with frequency converter

The **NR(D) EI**, **NR4 EI**, pumps are available with power from 0,25 kW up to 18,5 kW, the pumps are equipped with **I-MAT** installed on board which allows to realize a variable-speed system extremely compact and efficient, ideal in applications of water supply and in the distribution of hot and cold water.

The pump is equipped with transducers suitable for operation and is already programmed at the factory.

Advantages

- Energy saving
- Compact design
- Easy to use
- Programmable to suit the system requirements
- Reliability

Costruction

The system comprises of:

- Pump
- Induction motor (2 for NRD EI)
- I-MAT Frequency converter (2 for NRD EI)
- Motor adapter for the motor mounting of the frequency converter (2 for NRD EI)
- Connection cable between frequency converter and induction motor
- Transducers
- Communication cable for cascade mode for NRD EI
- 2 Cascade mode expansion board for NRD EI

Main features

Rated motor power output from 0,25 kW to 18,5 kW

Control range from 1750 to 2900 rpm (2-pole)

Control range from 870 to 1450 rpm (4-pole)

Protection against dry running

Protection against operations with closed valve ports

Protection against system leakages

Protection against overcurrent in the motor

Protection against overvoltage and undervoltage of the power supply

Protection against current unbalances between phases

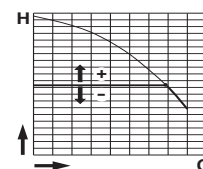


Operating modes



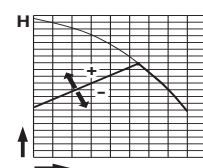
Constant pressure mode with pressure transducer

In this mode, the system maintains the preset pressure when the flow required by the installation changes.



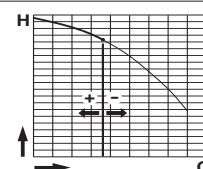
Proportional pressure mode with pressure transducer

In this mode the system changes the working pressure according to the required flow rate.



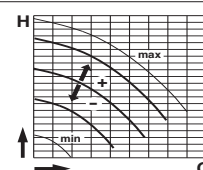
Constant flow mode with flow meter

In this mode the system maintains a constant flow rate value in a point of the installation according to the required pressure.



Fixed speed mode with setting of the speed preferential rotation.

In this mode, by changing the working frequency, you may choose any operational curve included within the working range.



Constant temperature mode with temperature transducer

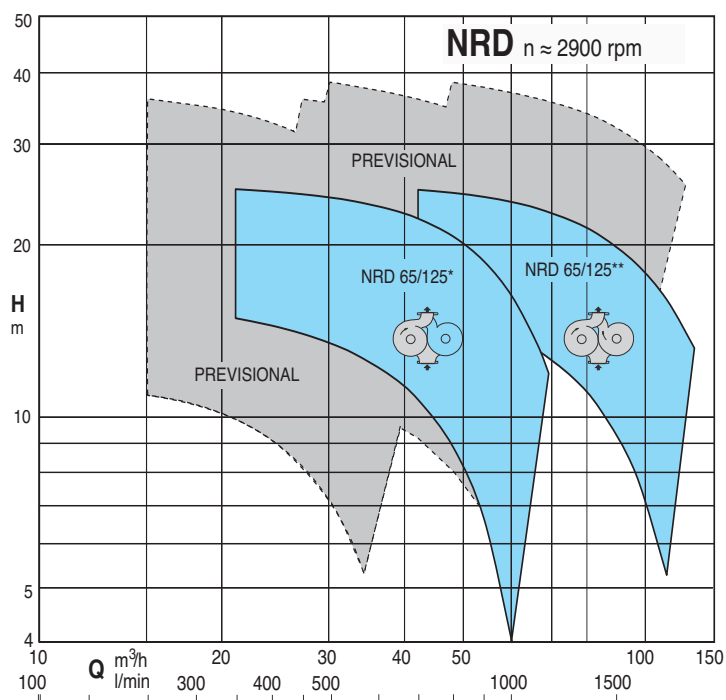
In this mode the system keeps the temperature constant inside a system by changing the speed of the pump.

NR(D)

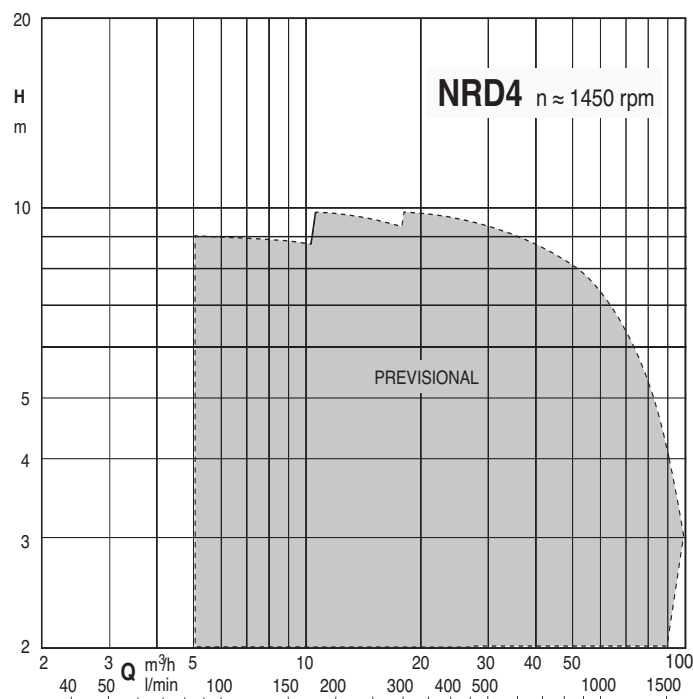
In-line Pumps



Coverage chart



* Single operation
** Parallel operation



NRD

In-line Pumps



Performance $n \approx 2900$ rpm

Single operation

3 ~	230V 400V		P ₂		Q	0	21	24	27	30	33	37,8	42	48	54	60	66	69			
	A	A	kW	HP	m ³ /h	0	350	400	450	500	550	630	700	800	900	1000	1100	1150			
NRD 65/125F	9,2	5,3	2,2	3	H	16,3	14,8	14,4	13,9	13,4	12,8	11,8	10,7	8,8	6,6	4,0					
NRD 65/125D	11,5	6,6	3	4	m	20,4	19,1	18,6	18,1	17,5	16,9	15,7	14,4	12,4	10,0	7,2	4,3				
NRD 65/125A		9,6	4	5,5		25,6	25,0	24,8	24,5	24,2	23,8	23,0	22,2	20,6	18,7	16,2	13,4	11,9			

Parallel operation

3 ~	230V 400V		P ₂		Q	0	42	48	54	60	66	75,6	84	96	108	120					
	A	A	kW	HP	m ³ /h	0	700	800	900	1000	1100	1260	1400	1600	1800	2000					
NRD 65/125F	9,2 x2	5,3 x2	2,2 x2	3 x2	H	16,3	15,2	14,8	14,4	13,8	13,0	11,7	10,2	7,9	5,2						
NRD 65/125D	11,5 x2	6,6 x2	3 x2	4 x2	m	20,4	19,8	19,4	18,9	18,4	17,7	16,4	15,0	12,7	10,0						
NRD 65/125A		9,6 x2	4 x2	5,5 x2		25,6	24,9	24,6	24,2	23,7	23,1	22,0	20,7	18,5	16,0	13,1					

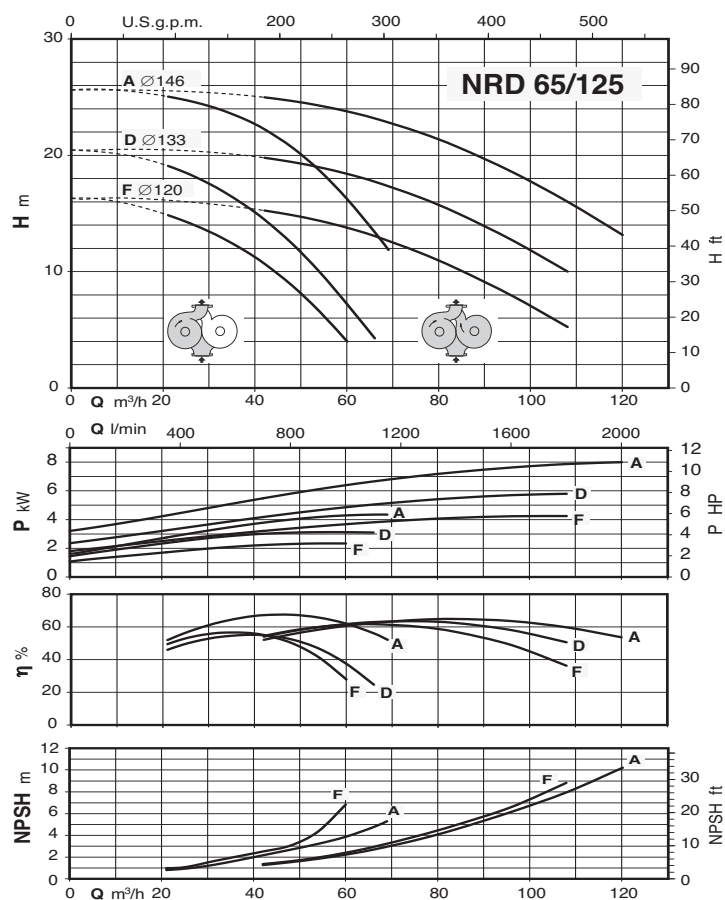
P1 Max. power input. P2 Rated motor power output. Tolerances according to UNI EN ISO 9906:2012

NRD

In-line Pumps



Curve caratteristiche $n \approx 2900$ 1/min

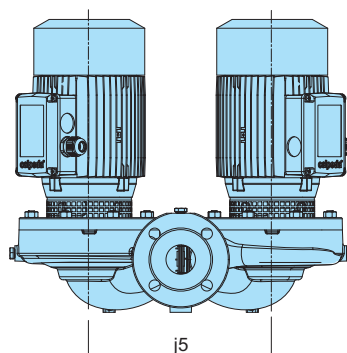
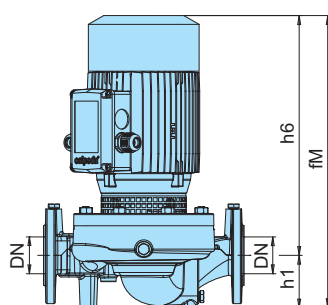


NRD

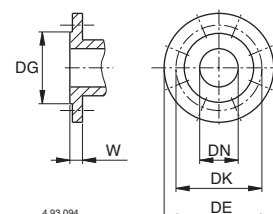
In-line Pumps



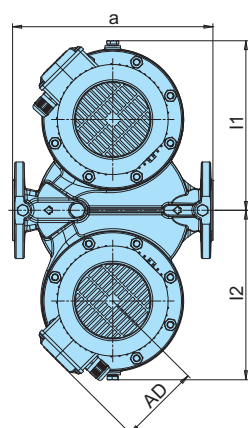
Dimensions and weights



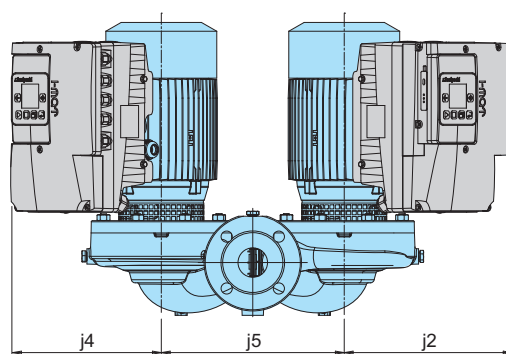
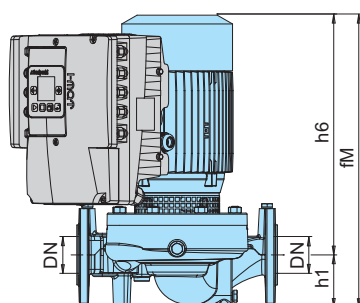
Flanges PN 10, EN 1092-2



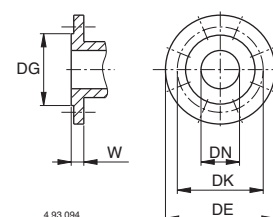
DN	mm				
	DG	DK	DE	Holes N°	W
65	118	145	185	4	19



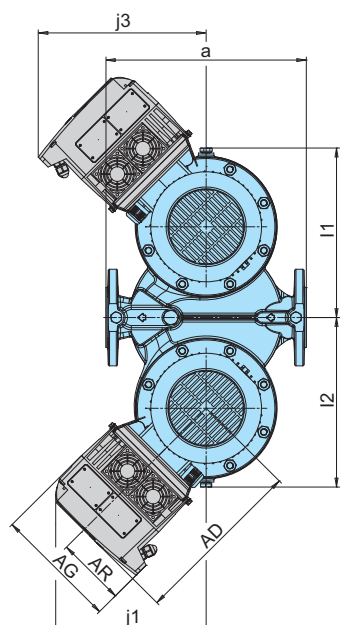
TYPE	mm									kg
	DN	a	fM	h1	h6	AD	j5	l1	l2	
NRD 65/125F	65	340	488,5	105	383,5	128	310	303,5	303,5	87,7
NRD 65/125A-D	65	340	514,5	105	409,5	138	310	303,5	303,5	106,3-99,3



Flanges PN 10, EN 1092-2



DN	mm				
	DG	DK	DE	Holes N°	W
65	118	145	185	4	19



TYPE	mm															kg
	DN	a	fM	h1	h6	AD	AG	AR	j1	j2	j3	j4	j5	l1	l2	
NRD EI 65/125F	65	340	488,5	105	383,5	286	210	118	248	278	278	248	310	303,5	303,5	102,7
NRD EI 65/125A-D	65	340	514,5	105	409,5	294	210	118	255	285	285	255	310	303,5	303,5	121,3-114,3