

Domestic (sanitary) hot water circulation

High-efficiency pumps (single pumps)



Series overview Wilo-Stratos-Z



Design

Self regulating, Inline, ECM (Electronically Communicated) type

Application

Secondary hot water circulation systems of all kinds, hot-water heating systems of all kinds, air-conditioning, closed cooling circuits, industrial circulation systems

Model Numbers

Example: **Wilo-Stratos-Z 1.5 - 3 x 40**

Stratos High-efficiency pump, electronically controlled

Z NSF 61 Annex G certified pump for Domestic and Sanitary Hot Water

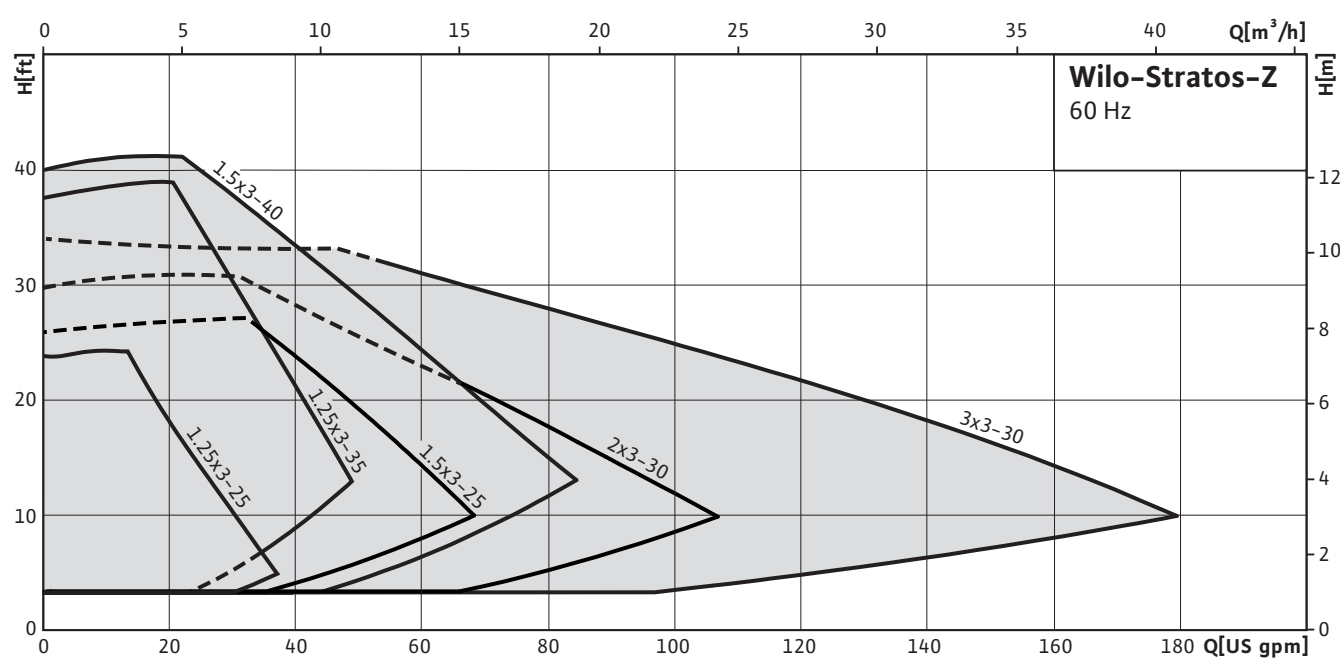
1.5 Flange size [in]

3 x 40 Min/max discharge head [ft]

Special features/product benefits

- Maximum efficiency with ECM technology
- Up to 80% energy savings compared to standard uncontrolled pumps
- Ease of installation with front access to wiring and programming "Red Button", position adjustable LCD viewing screen
- Lead free construction, Stainless Steel volute, NSF 61 Annex G certified
- External control and monitoring via optional IR interface modules (LONworks, BACnet, 0-10 Vdc, Ext Off, Ext Min and SBM Run Signal)
- Remote control and access to data logger via IF infra-red device
- Built in overload fault contacts (opens on over/under voltage, dry run, locked rotor, overload and over temperature)

Duty chart



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Equipment/function

Operating modes

- Manual control mode (constant speed)
- Δp -c for constant differential pressure
- Δp -v for variable differential pressure
- Δp -T for temperature-controlled differential pressure (programmable via Infra-red device, LON or BacNet)

Manual functions

- Operating mode setting
- Differential-pressure setpoint setting
- Setting automatic setback operation
- Pump ON/OFF setting
- Speed setting (manual control mode)

Automatic functions

- Stageless power adjustment depending on the operating mode
- Automatic setback operation
- Deblocking function
- Soft start
- Full motor protection with integrated overload shut down

External control functions

- "External Off" control input (possible with optional Stratos IF-Modules)
- "External Min" control input (possible with optional Stratos IF-Modules)
- "Analogue In 0 - 10 V" control input (remote speed adjustment) (possible with optional Stratos IF-Modules)
- "Analogue In 0 - 10 V" control input (remote setpoint adjustment) (possible with optional Stratos IF-Modules)

Signal and display functions

- Collective fault signal (potential-free NC contact)
- Individual run signal (potential-free NO contact) (possible with optional Stratos IF-Modules)
- Fault signal light
- LC display for pump data and fault codes

Data exchange

- Infrared interface for wireless data exchange with IR-Module/IR-Stick
- Serial digital interface BACnet MS/TP Slave for connection to building automation BA via BUS system RS485 (possible with IF-Modules Stratos).
- Serial digital LON interface for connection to a LONWorks network (possible with Stratos IF-Modules)

Dual pump management (dual pump or 2 x single pump)

- Main/standby mode (automatic fault-actuated switchover/time-dependent pump cycling): Various combinations with Stratos IF-Modules (accessories) possible
- Parallel operation (efficiency-optimised peak load activation and deactivation): Various combinations with Stratos IF-Modules (accessories) possible

Scope of delivery

- Pump
- Flange gaskets
- Operating instructions

Accessories

- IR-Module
- IR-Stick
- IF-Modules Stratos: BACnet, LONworks, Ext. Off, Ext. Min, SBM, Ext. Off/SBM

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Equipment/function

Wilo-Stratos-Z	
Operating modes	
Manual control mode (constant speed)	•
Δp -c for constant differential pressure	•
Δp -v for variable differential pressure	•
Δp -T for temperature-controlled differential pressure	•
Manual functions	
Operating mode setting	•
Differential-pressure setpoint setting	•
Setting automatic setback operation	•
Pump ON/OFF setting	•
Speed setting (manual control mode)	•
Automatic functions	
Infinitely variable power adjustment depending on the operating mode	•
Automatic setback operation	•
Deblocking function	•
Soft start	•
Integrated overload protection	•
External control functions	
"Analogue In 0 ... 10 V" control input (remote speed adjustment)	• (Possible with optional Interface Module)
"Analogue In 0 ... 10 V" control input (remote adjustment setpoint)	• (Possible with optional Interface Module)
Signal and display functions	
Collective fault signal (potential-free NC contact)	•
Fault signal light	•
LCD screen for the display of pump data and fault codes	•
Data exchange	
Infra-red remote control for wireless data exchange and/or pump adjustment via USB stick or PDA type IR device	•
Serial digital LON interface for connection to a LON-WORKS network	• (Possible with optional Interface Module)
Serial digital BACnet S/TP interface for connection to an RS485 bus system	• (Possible with optional Interface Module)
Dual pump management (dual pump or 2 x single pump)	
Main/standby mode (automatic fault-actuated switchover/time-dependent pump cycling)	•
Parallel operation (efficiency-optimised peak load cut-in and out)	•
Equipment/scope of delivery	
Flange gasket	• (not for 125# ANSI Flange model)
Installation and operating instructions	•

• = available, – = not available

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Technical data Wilo-Stratos-Z

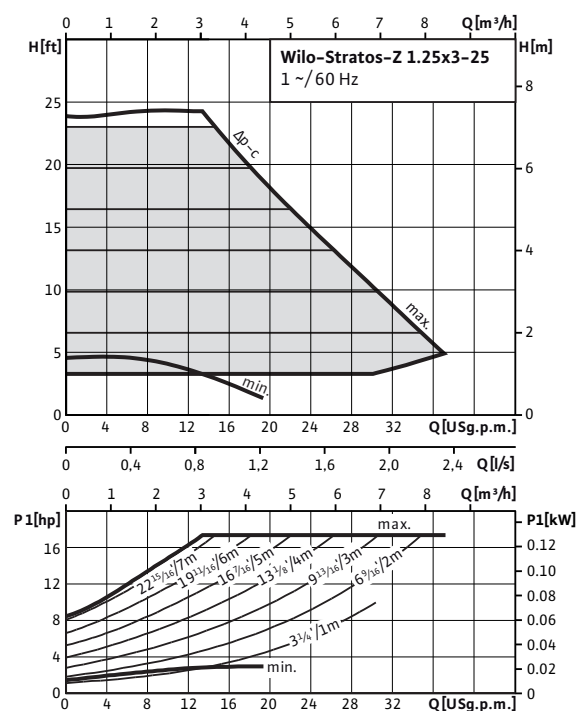
	Wilo-Stratos-Z...					
	1.25x3-25	1.25x3-35	1.5x3-25	1.5x3-40	2x3-30	3x3-30
Approved fluids (other fluids on request)						
Heating water	•	•	•	•	•	•
Water glycol mixtures up to 50% concentration	•	•	•	•	•	•
Power						
Max. head H_{max}	23 ft	36 ft	26 ft	39 ft	30 ft	33 ft
Max. head H_{max}	7 m	11 m	8 m	12 m	9 m	10 m
Max. flow Q_{max}	35 US GPM	48 US GPM	66 US GPM	83 US GPM	105 US GPM	180 US GPM
Max. flow Q_{max}	8 m ³ /h	11 m ³ /h	15 m ³ /h	19 m ³ /h	24 m ³ /h	41 m ³ /h
Permitted field of application						
Temperature range for applications in heating, ven-tilation & air-conditioning systems at max. ambient temperature of +40 °C	+14 to +230 °F (–10 to +110 °C)					
Temperature range for applications in secondary hot water circulation systems at max. ambient tempera-ture of +40 °C	+32 to +176 °F (0 to +80 °C)					
Max. ambient temperature T	104 °F					
Max. ambient temperature T	40 °C					
Max. permitted total hardness in potable water cir-culation systems	3.57 mmol/l					
Pipe connections						
Nominal flange diameter Dia	1.25 "	1.25 "	1.5 "	1.5 "	2 "	3 "
Non ANSI flange (oval, rotated 90°)	•	•	•	•	–	–
Non ANSI flange (oval)	–	–	–	–	–	–
HV pump flange	–	–	–	–	•	–
125# ANSI flange	–	–	–	–	–	•
Electrical connection						
Input power – single phase U	230 V	230 V	230 V	230 V	230 V	230 V
Input frequency f	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Motor/electronics						
Speed control	Frequency converter					
Degree of protection	Enclosure 2					
Insulation class	H	H	H	H	H	H
Materials						
Pump volute	Stainless steel (AISI CF-8M)					
Impeller	Engineered composite (PPS – 40% GF)					Engineered composite (PPE – 30% GF)
Pump shaft	Stainless steel (X39CrMo17-1)					
Bearing	Carbon, synthetic resin impregnated					
Minimum suction head						
Minimum suction head at 122 °F (50°C)	4.3 psi	4.3 psi	4.3 psi	7.1 psi	7.1 psi	10.0 psi
Minimum suction head at 203 °F (95°C)	14.2 psi	14.2 psi	14.2 psi	17.1 psi	17.1 psi	21.3 psi
Minimum suction head at 230 °F (110°C)	22.8 psi	22.8 psi	22.8 psi	25.6 psi	25.6 psi	32.7 psi

• = available, – = not available

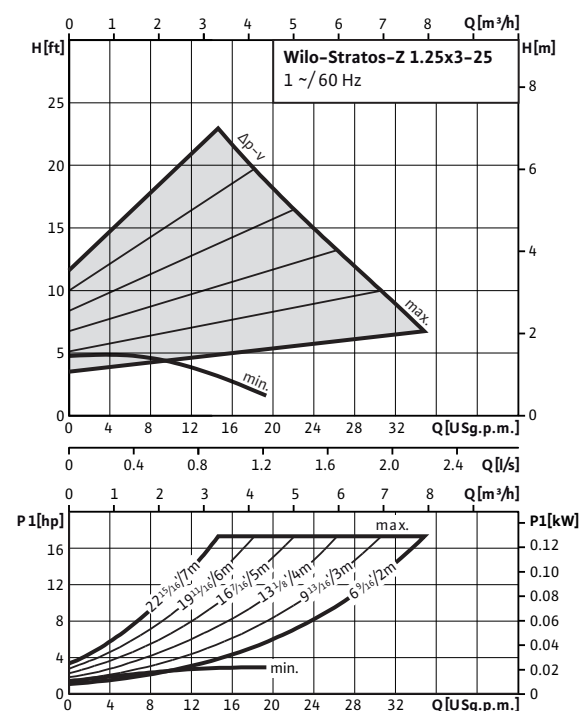
Pump curves Wilo-Stratos-Z

Wilo-Stratos-Z 1.25x3-25

Δp -c (constant)

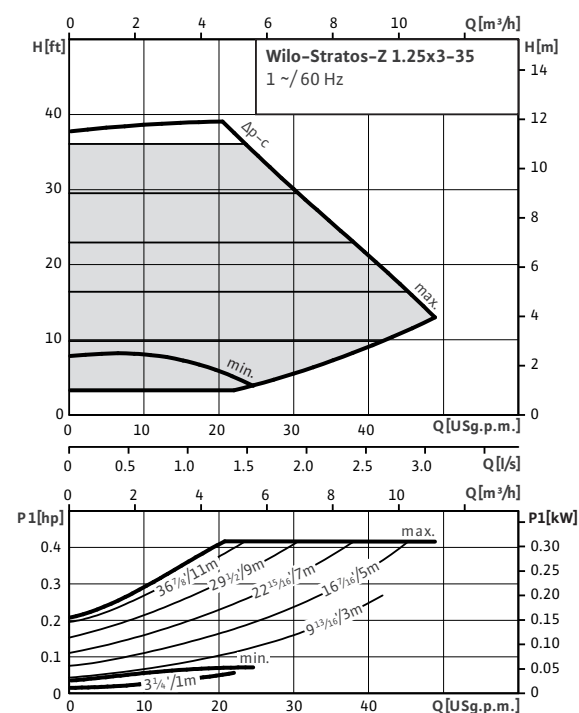


Δp -v (variable)

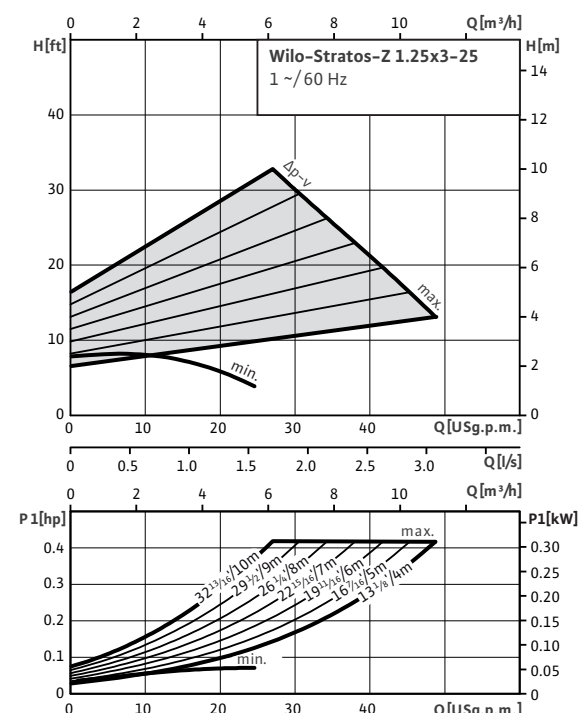


Wilo-Stratos-Z 1.25x3-35

Δp -c (constant)



Δp -v (variable)



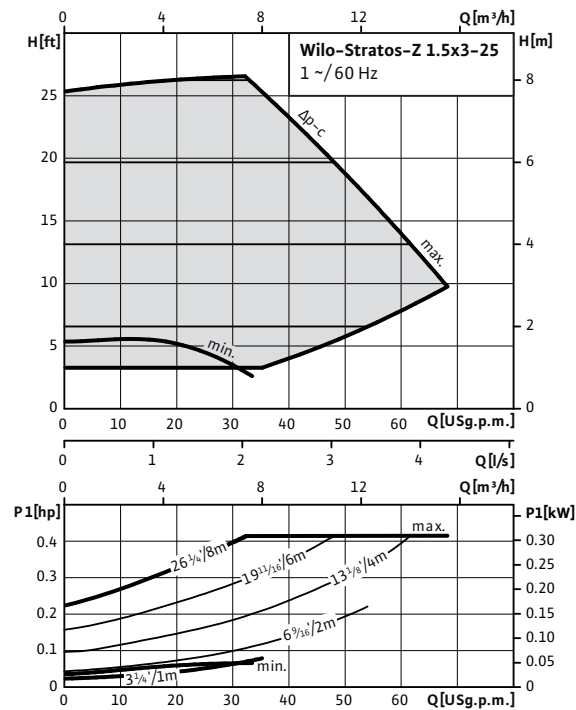
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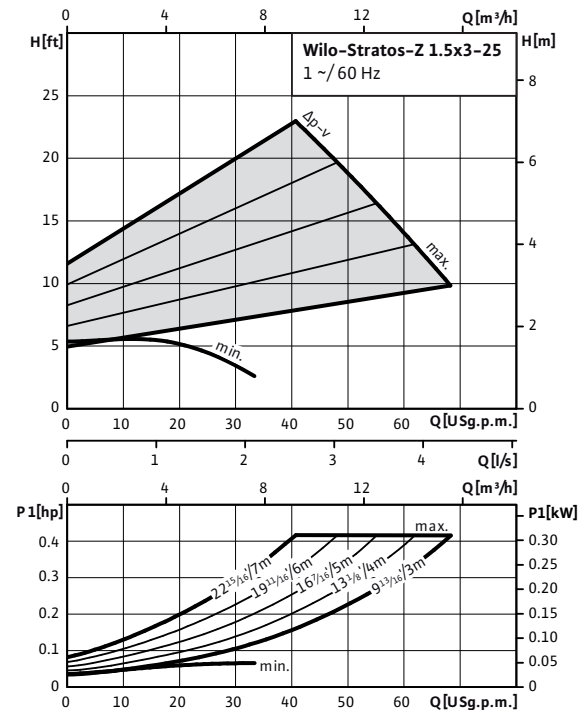
Pump curves Wilo-Stratos-Z

Wilo-Stratos-Z 1.5x3-25

Δp -c (constant)

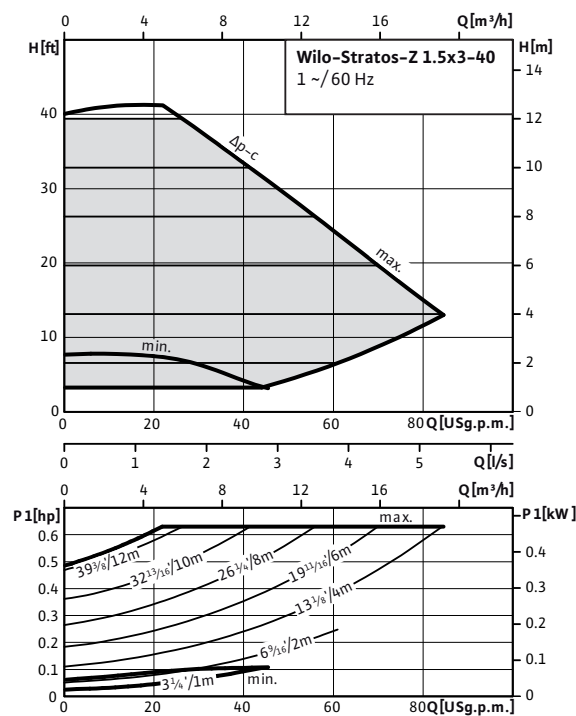


Δp -v (variable)

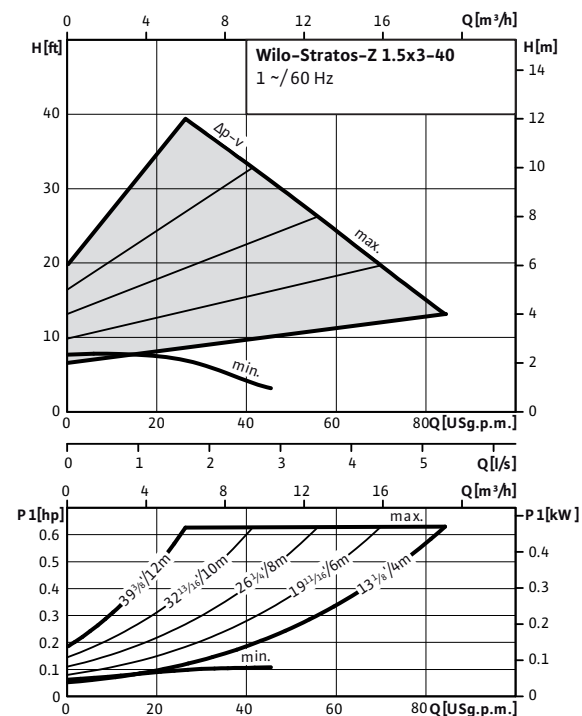


Wilo-Stratos-Z 1.5x3-40

Δp -c (constant)



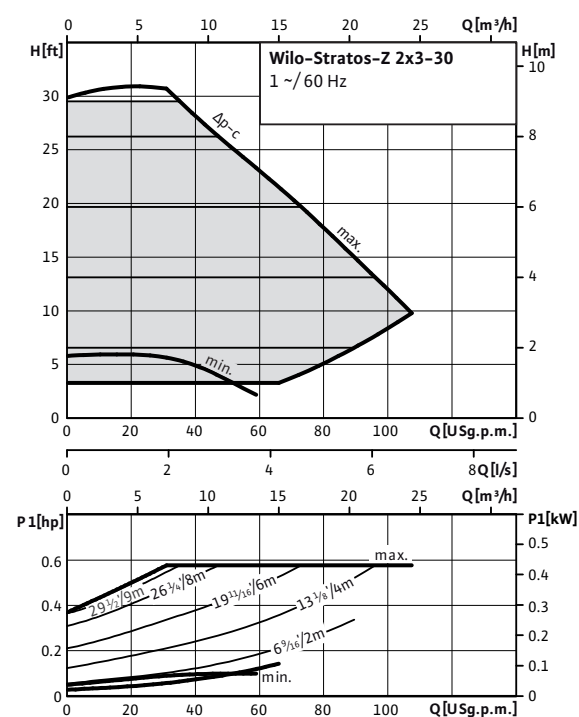
Δp -v (variable)



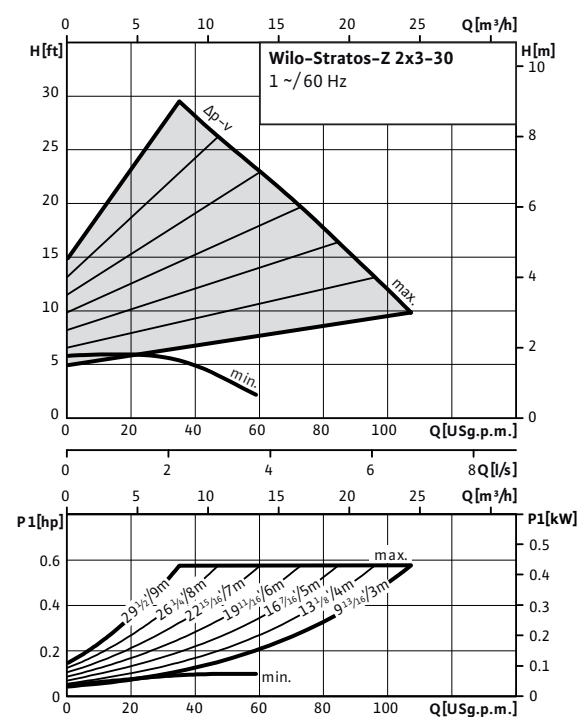
Pump curves Wilo-Stratos-Z

Wilo-Stratos-Z 2x3-30

Δp -c (constant)

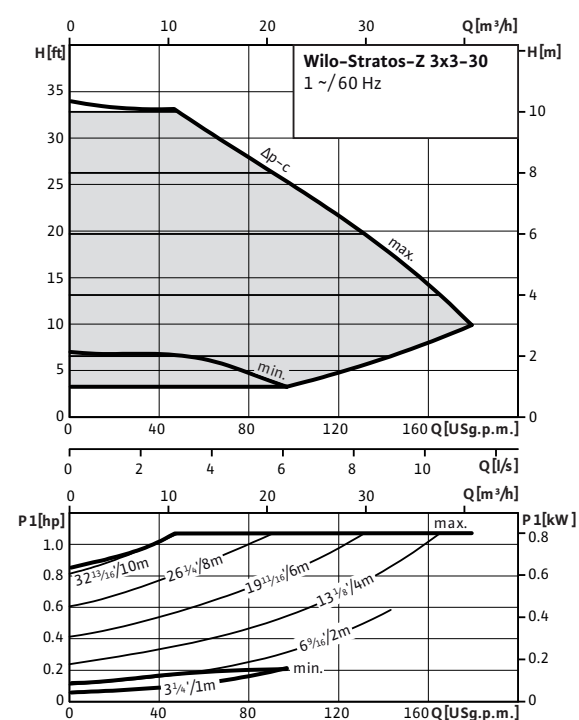


Δp -v (variable)

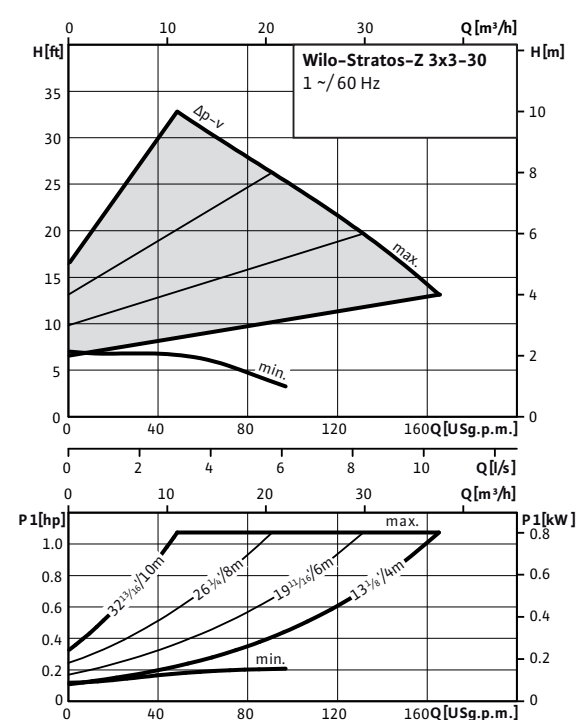


Wilo-Stratos-Z 3x3-30

Δp -c (constant)



Δp -v (variable)



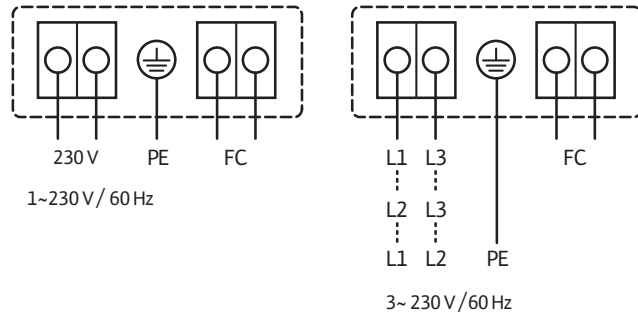
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Terminal diagram, motor data Wilo-Stratos-Z

Terminal diagram

FC: Collective fault signal (NC contact rating 1 A, 250 V~)

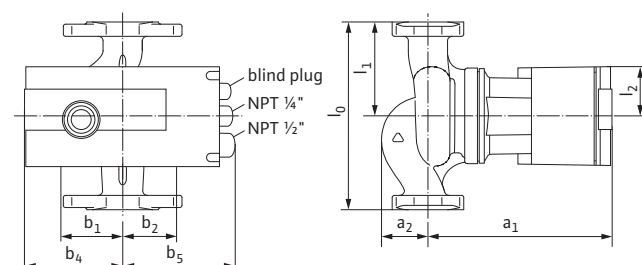


Motor data

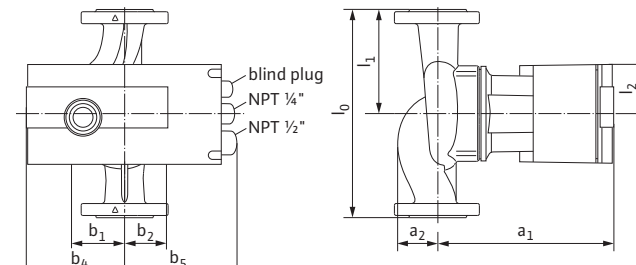
Wilo-Stratos-Z...	Rated motor power	Speed	Power consumption 1~230 V	Current at 1~230V	Current at 3~230V	Thermal protection	Threaded cable connection
	P_2	n	P_1	I		–	–
	hp	rpm	W	A		–	
1.25x3-25	0.134	1400 – 3700	9 – 130	0.13 – 1.20	0.13 – 1.20	integrated	1xNPT 1/4" 1xNPT 1/2"
1.25x3-35	0.268	1600 – 4800	16 – 310	0.16 – 1.37	0.16 – 1.37	integrated	1xNPT 1/4" 1xNPT 1/2"
1.5x3-25	0.268	1800 – 4800	18 – 310	0.17 – 1.37	0.17 – 1.37	integrated	1xNPT 1/4" 1xNPT 1/2"
1.5x3-40	0.469	1400 – 4600	25 – 470	0.20 – 2.05	0.20 – 2.05	integrated	1xNPT 1/4" 1xNPT 1/2"
2x3-30	0.469	1400 – 4100	25 – 430	0.20 – 1.88	0.20 – 1.88	integrated	1xNPT 1/4" 1xNPT 1/2"
3x3-30	0.872	950 – 3300	38 – 800	0.30 – 3.50	0.30 – 3.50	integrated	1xNPT 1/4" 1xNPT 1/2"

Dimensions, weights Wilo-Stratos-Z

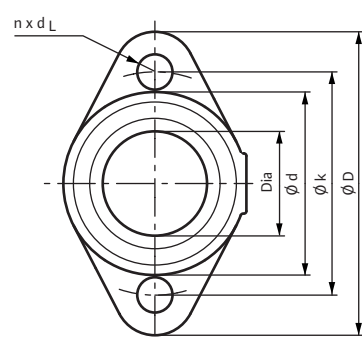
Dimension drawing 1



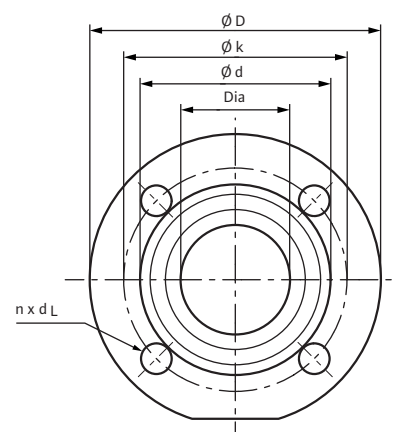
Dimension drawing 3



Dimension drawing flange 1



Dimension drawing flange 2



Dimensions, weights

Wilo-Stratos-Z...	Nominal flange diameter		Overall length		Dimensions							
	Dia		l ₀		l ₁		l ₂		a ₁		a ₂	
	ln.	—	ln.	mm	ln.	mm	ln.	mm	ln.	mm	ln.	mm
1.25x3-25	1.25	32	6 ¹ / ₂	165	3 ¹ / ₄	82.5	1 ¹⁵ / ₁₆	49	7 ³ / ₁₆	182	1 ³ / ₄	45
1.25x3-35	1.25	32	8 ¹ / ₂	216	4 ¹ / ₄	108	2 ³ / ₁₆	55	7 ¹⁵ / ₁₆	201	2 ¹ / ₁₆	52
1.5x3-25	1.5	40	8 ¹ / ₂	216	4 ¹ / ₄	108	2 ³ / ₁₆	55	8	203	2 ¹ / ₁₆	53
1.5x3-40	1.5	40	10	254	5	127	2 ⁵ / ₈	66	9 ¹⁵ / ₁₆	252	2 ¹ / ₂	64
2x3-30	2	50	11	279	5 ¹ / ₂	139.5	2 ⁵ / ₈	66	10 ¹ / ₁₆	256	2 ¹ / ₂	63
3x3-30	3	80	14	356	7	178	3 ¹ / ₁₆	78	12 ¹³ / ₁₆	325	3 ⁷ / ₁₆	87

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Dimensions, weights Wilo-Stratos-Z

Dimensions, weights

Wilo-Stratos-Z...	Dimensions								Weight approx.		Dimension drawing
	b_1		b_2		b_4		b_5		m		–
	In.	mm	In.	mm	In.	mm	In.	mm	lbs	kg	–
1.25x3-25	2 ¹ / ₈	54	1 ⁷ / ₈	48	3 ¹ / ₂	89	5 ⁹ / ₁₆	142	9.92	4.5	1
1.25x3-35	2 ³ / ₈	61	2 ³ / ₁₆	55	4 ³ / ₁₆	106	5 ³ / ₄	146	13.23	6.0	1
1.5x3-25	2 ⁵ / ₈	66	2 ³ / ₁₆	55	4 ³ / ₁₆	106	5 ³ / ₄	146	20.94	9.5	1
1.5x3-40	2 ⁷ / ₈	73	2 ¹ / ₂	64	4 ³ / ₄	120	6 ⁷ / ₁₆	163	28.66	13.0	1
2x3-30	3 ¹ / ₄	82	2 ¹ / ₂	64	4 ³ / ₄	120	6 ⁷ / ₁₆	163	30.86	14.0	3
3x3-30	4 ¹ / ₁₆	103	3 ⁵ / ₁₆	84	6 ¹ / ₈	156	7 ¹ / ₂	191	59.52	27.0	3

Flange dimensions

Wilo-Stratos-Z...	Flange	Nominal flange diameter		Pump flange dimensions								Dimension drawing, flange
				$\varnothing d$				$\varnothing k$		$n \times \varnothing d_L$		–
		In.	–	In.	mm	In.	mm	In.	mm	pcs. x In.	pcs. x mm	–
1.25x3-25	Non ANSI (oval 90° rotated)	1.25	32	4 ³ / ₄	121	2 ⁷ / ₈	73	3 ¹ / ₂	89	2 x ⁹ / ₁₆	2 x 14	1
1.25x3-35	Non ANSI (oval 90° rotated)	1.25	32	4 ³ / ₄	121	2 ⁷ / ₈	73	3 ¹ / ₂	89	2 x ⁹ / ₁₆	2 x 14	1
1.5x3-25	Non ANSI (oval)	1.5	40	4 ³ / ₄	121	2 ⁷ / ₈	73	3 ¹ / ₂	89	2 x ⁹ / ₁₆	2 x 14	1
1.5x3-40	Non ANSI (oval)	1.5	40	4 ³ / ₄	121	2 ⁷ / ₈	73	3 ¹ / ₂	89	2 x ⁹ / ₁₆	2 x 14	1
2x3-30	Non ANSI (round)	2	50	5 ¹ / ₄	133	3 ⁷ / ₁₆	87	4	102	4 x ⁹ / ₁₆	4 x 14	2
3x3-30	ANSI R.F Class 125 ASTM A 126	3	80	7 ⁹ / ₁₆	192	5 ¹ / ₁₆	128	6	152	4 x ³ / ₄	4 x 19	2