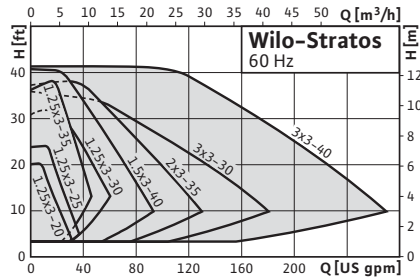


# Circulating Pumps

## Product review

### Range: Wilo-Stratos



#### > Single head pumps:

- In line, flanged wet rotor circulator with EC motor and automatic capacity adjustment

#### > Applications:

- Hot-water heating systems, air conditioning, closed cooling circuits, industrial circulating systems

#### > Special features/product advantages:

- Energy efficiency class A
- Up to 80% power saving compared with constant speed circulating pumps
- Maximum efficiency thanks to ECM technology

#### > Description/construction

- Wet rotor circulator with EC motor and integrated automatic capacity adjustment
- Red button technology for very easy operation
- Graphic pump display with rotatable display adjustable from US units (default) to metric
- Pump communication with IF (interface) module that can be easily retrofitted: ideal external operation
- Motor protection with electronic overload protection (min/max voltage, max temp, dry run, overload)
- Interface connection for extending built in functions, for building automation (BA) systems and external control
- Impeller with three-dimensional curved blades and rotor can using carbon fibre compound material

# Circulating Pumps

## Product review



	Wilo-Stratos...							
	1.25x3-20	1.25x3-25	1.25x3-30	1.25x3-35	1.5x3-40	2x3-35	3x3-30	3x3-40
<b>Operating modes (pre-selectable control modes)</b>								
Manual control mode (n=constant)					•			
$\Delta p$ -c for constant differential pressure					•			
$\Delta p$ -v for variable differential pressure					•			
$\Delta p$ -T for temperature-prompted differential pressure					•			
<b>Manual functions</b>								
Setting the operating mode					•			
Setting the differential-pressure set-point					•			
Setting to "Autopilot" (automatic setback mode)					•			
Setting the pump to ON/OFF					•			
Setting the speed (manual setting mode)					•			
<b>Automatic functions</b>								
Stepless power adjustment depending on the operating mode					•			
"Autopilot" automatic setback mode					•			
Deblocking function					•			
Soft start					•			
Full motor protection with integrated trip electronics					•			
<b>External control functions</b>								
Control input "Analogue In 0-10 V" (remote speed adjustment)					•	Possible with Stratos IF-Modules (accessory)		
Control input "Analogue In 0-10 V" (remote setpoint adjustment)					•	Possible with Stratos IF-Modules (accessory)		
<b>Signal and display functions</b>								
Collective fault signal (potential-free NC contact)					•			
Fault lamp					•			
LC display for showing pump data and fault codes					•			

• = available, – = not available

# Circulating Pumps

## Product review

Wilo-Stratos...								
	1.25x3-20	1.25x3-25	1.25x3-30	1.25x3-35	1.5x3-40	2x3-35	3x3-30	3x3-40
<b>Data exchange</b>								
Infra-red interface for wireless data exchange with IR-Module/IR-Monitor					•			
Serial digital LON interface for connection to a LONWorks network					•	Possible with Stratos IF-Modules (accessory)		
<b>Dual pump management (2 x single-head pump)</b>								
Main/standby operation (automatic fault-actuated switchover/time-sensitive pump alteration)					•	Various combinations with Stratos IF-Modules (accessory) possible		
Parallel operation (efficiency-optimised peak-load cut-in and out)					•	Various combinations with Stratos IF-Modules (accessory) possible		
<b>Scope of delivery</b>								
Pump					•			
Flange gaskets					•			
Installation and operating instructions (full manual and one page "quick start" manual)					•			

• = available, — = not available

# Circulating Pumps

## Product review



### Function, equipment Wilo-Stratos

	Wilo-Stratos...							
	1.25x3-20	1.25x3-25	1.25x3-30	1.25x3-35	1.5x3-40	2x3-35	3x3-30	3x3-40
<b>Approved fluids (other fluids on request)</b>								
Heating water	•	•	•	•	•	•	•	•
Water/glycol mixtures (max. 1:1; mixtures with more than 20 % glycol require reassessment of the hydraulic criteria)	•	•	•	•	•	•	•	•
Domestic hot water	–	–	–	–	–	–	–	–
<b>Performance</b>								
Max. delivery head [ft]	20	23	20	36	39	36	36	43
Max. delivery head [m]	6	7	9	11	12	11	11	13
Max. volume rate of flow [USGPM]	31.0	35.2	57.2	44.0	92.5	127.7	180.5	268.6
Max. volume rate of flow [m <sup>3</sup> /h]	7	8	13	10	21	29	41	61
<b>Acceptable field of application</b>								
Temperature range for application in heating and cooling installations	14 °F (–10 °C) up to 230 °F (+110 °C)							
Temperature range for open circulating system [°F]	–	–	–	–	–	–	–	–
Temperature range in domestic hot water system [°F]	–	–	–	–	–	–	–	–
Ambient temperature range	104 °F (+40 °C)							
Max. working pressure $p_{max}$ [psi]	145	145	145	145	145	145	145	145
<b>Pipe connections</b>								
Nominal connection diameter – DS [in]	1.25	1.25	1.25	1.25	1.5	2.0	3.0	3.0
Non ANSI flange (oval, rotated 90°)	•	•	•	•	–	–	–	–
Non ANSI flange (oval)	–	–	–	–	•	–	–	–
Non ANSI flange (round)	–	–	–	–	–	•	–	–
ANSI flange	–	–	–	–	–	–	•	•
<b>Electrical connections</b>								
Power supply 1~ [V]	230	230	230	230	230	230	230	230
Power supply 3~ [V]	230	230	230	230	230	230	230	230
Frequency [Hz]	60	60	60	60	60	60	60	60
<b>Motor/Electronics</b>								
Power electronics	Frequency converter							
Degree of protection	Enclosure 2							
Insulation class	H	H	H	H	H	H	H	H

• = available, – = not available

# Circulating Pumps

## Product review

### Technical data Wilo-Stratos

	Wilo-Stratos...							
	1.25x3-20	1.25x3-25	1.25x3-30	1.25x3-35	1.5x3-40	2x3-35	3x3-30	3x3-40
<b>Materials</b>								
Pump housing	Cataphoretic coated cast iron (EN-GJL 250)							
Impeller	Engineered composite PPS						Engineered composite PP	
Shaft	Stainless steel (X46 Cr13)							
Bearing	Metal impregnated carbon							
<b>Minimal static inlet pressure at pump suction port [psi] to avoid cavitation at fluid temperatures</b>								
122 °F (50 °C)	4.4	4.4	4.4	4.4	7.3	7.3	10.2	10.2
203 °F (95 °C)	14.5	14.5	14.5	14.5	17.4	17.4	21.8	21.8
230 °F (110 °C)	23.2	23.2	23.2	23.2	26.1	26.1	33.4	33.4

• = available, — = not available

# Circulating Pumps

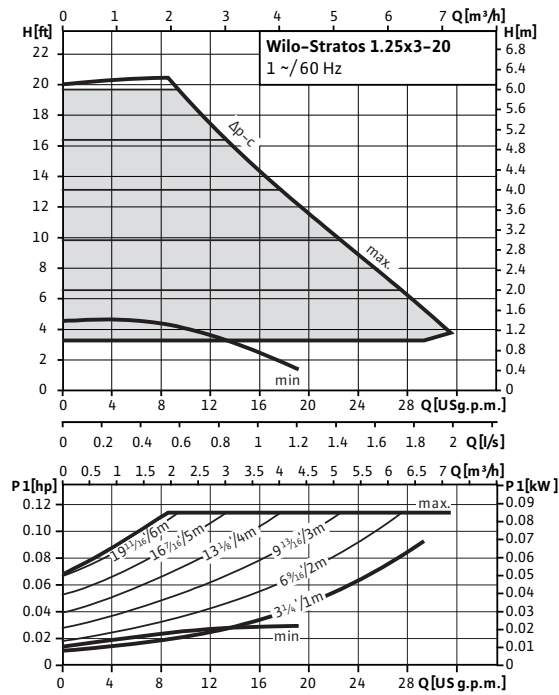
Wilo-Stratos



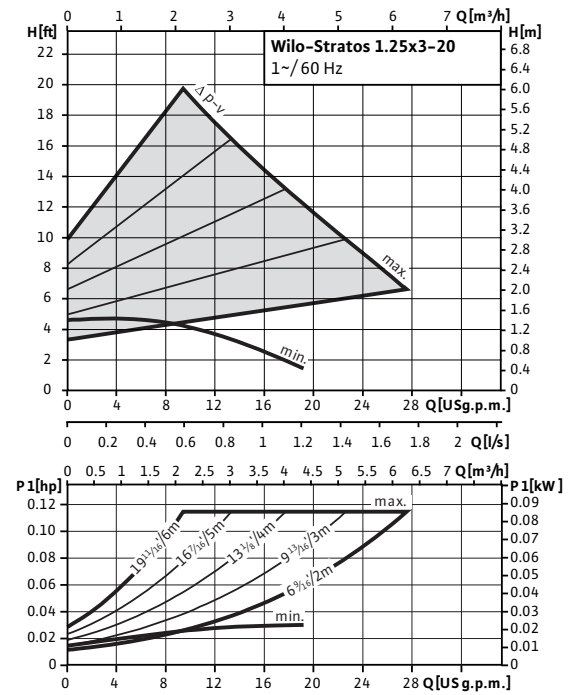
## Pump curves Wilo-Stratos

### Wilo-Stratos 1.25x3-20

$\Delta p$ -c (constant)

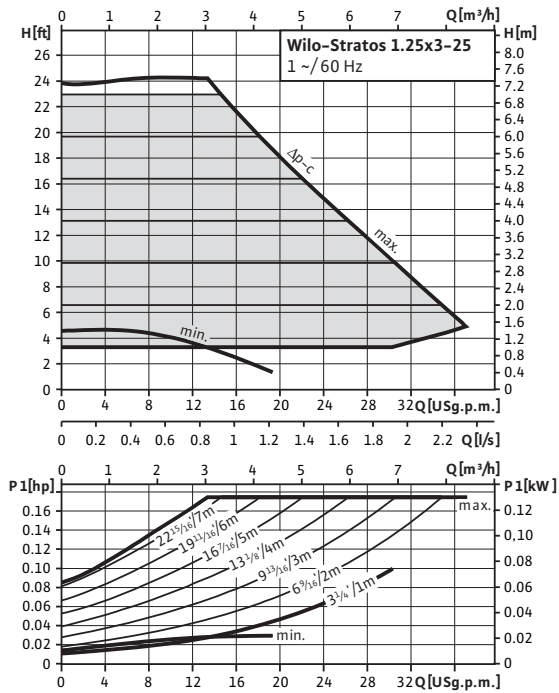


$\Delta p$ -v (variable)

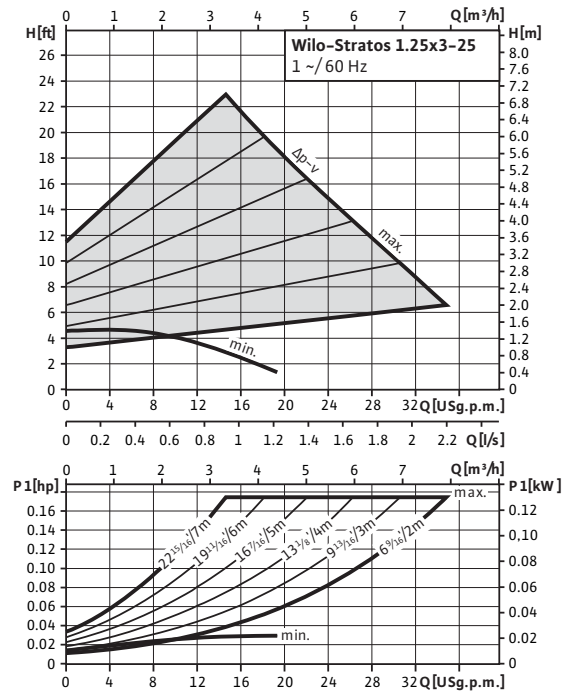


### Wilo-Stratos 1.25x3-25

$\Delta p$ -c (constant)



$\Delta p$ -v (variable)



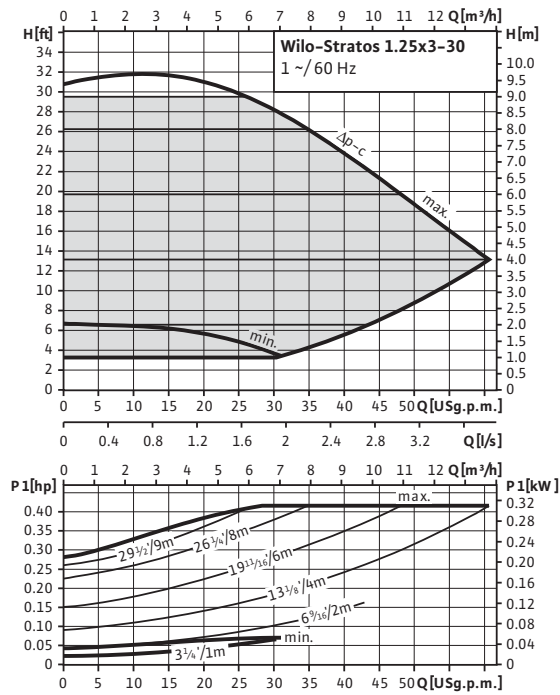
# Circulating Pumps

Wilco-Stratos

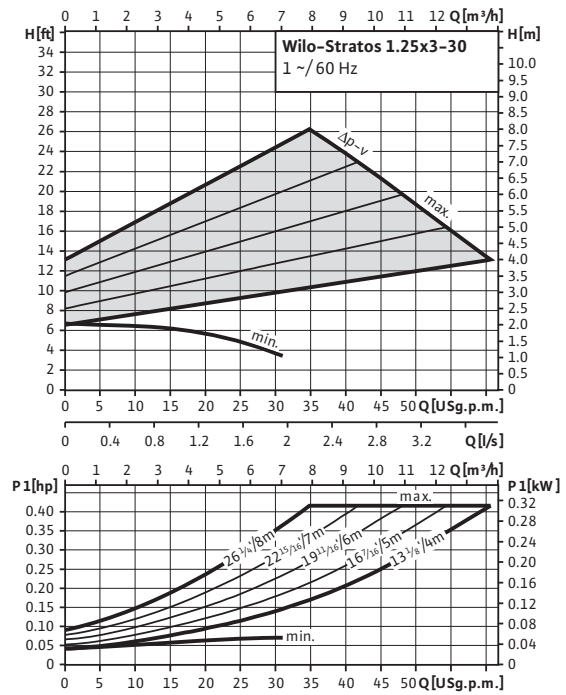
## Pump curves Wilco-Stratos

### Wilco-Stratos 1.25x3-30

$\Delta p$ -c (constant)

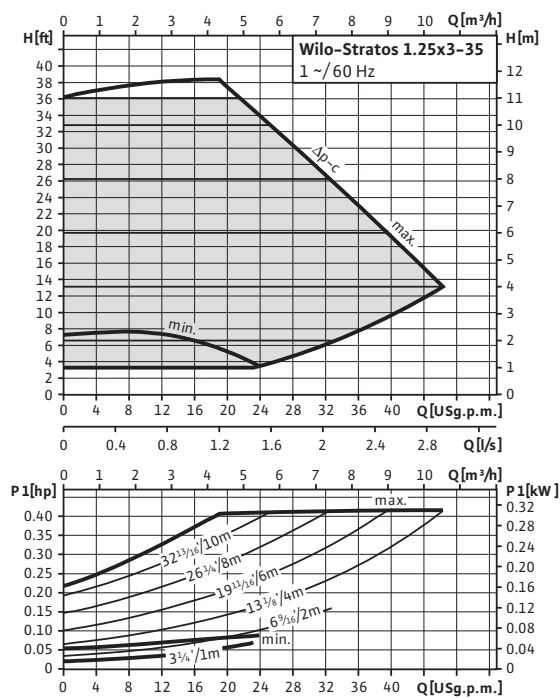


$\Delta p$ -v (variable)

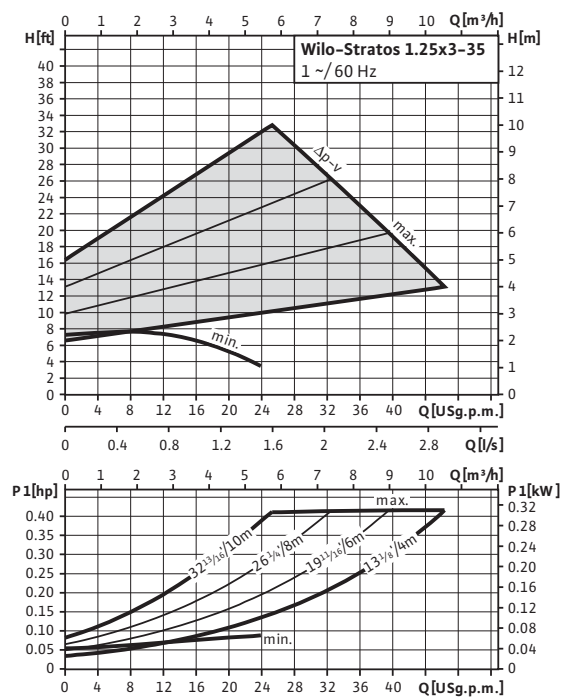


### Wilco-Stratos 1.25x3-35

$\Delta p$ -c (constant)



$\Delta p$ -v (variable)



# Circulating Pumps

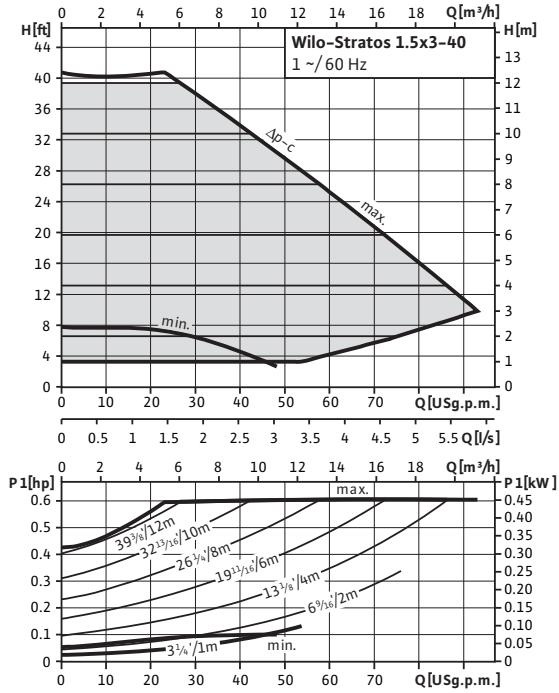
Wilo-Stratos



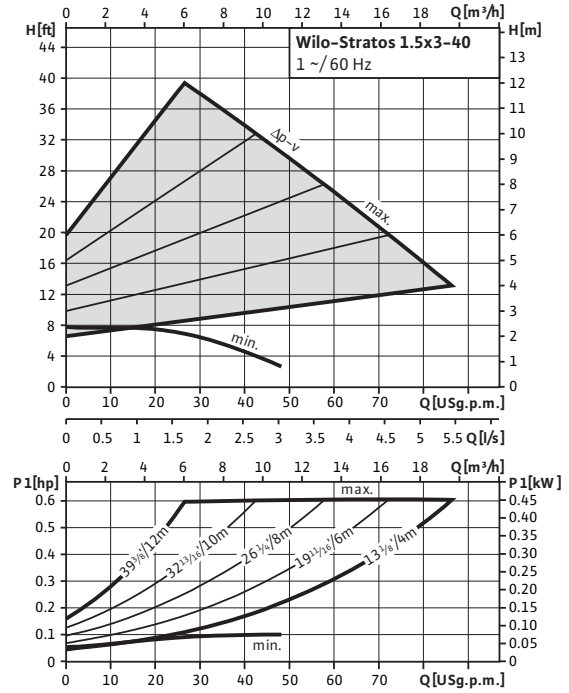
## Pump curves Wilo-Stratos

### Wilo-Stratos 1.5x3-40

$\Delta p$ -c (constant)

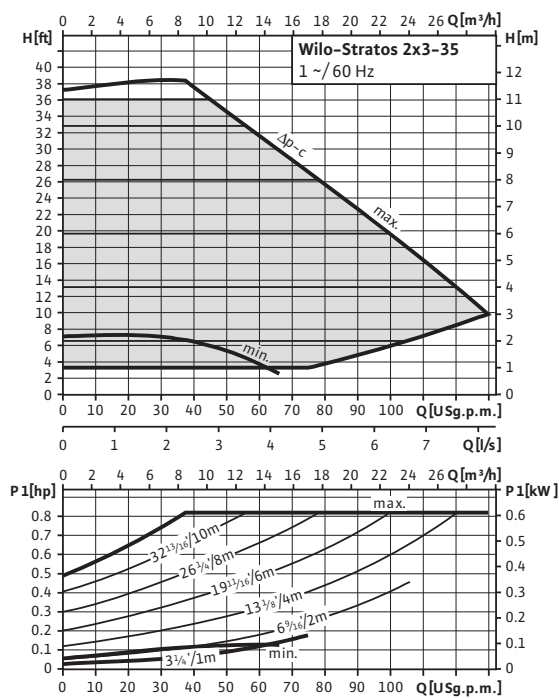


$\Delta p$ -v (variable)

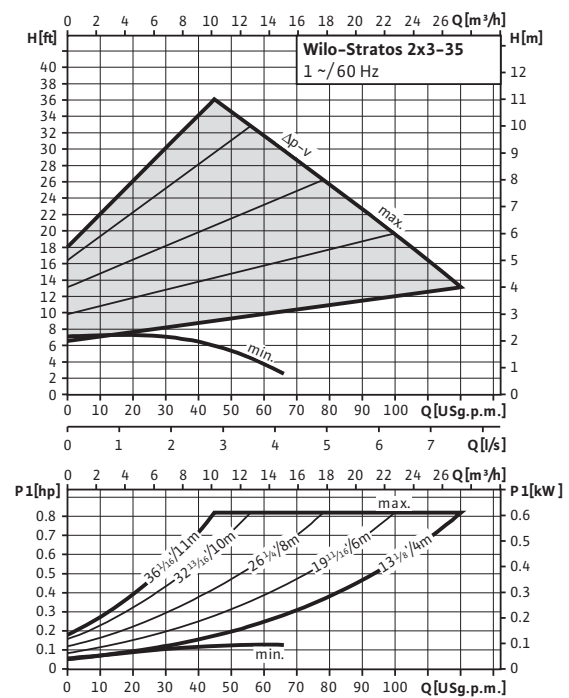


### Wilo-Stratos 2x3-35

$\Delta p$ -c (constant)



$\Delta p$ -v (variable)





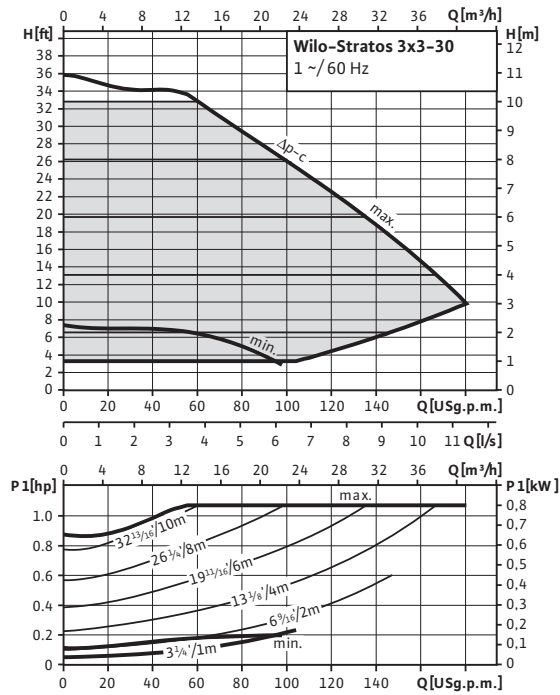
# Circulating Pumps

Wilo-Stratos

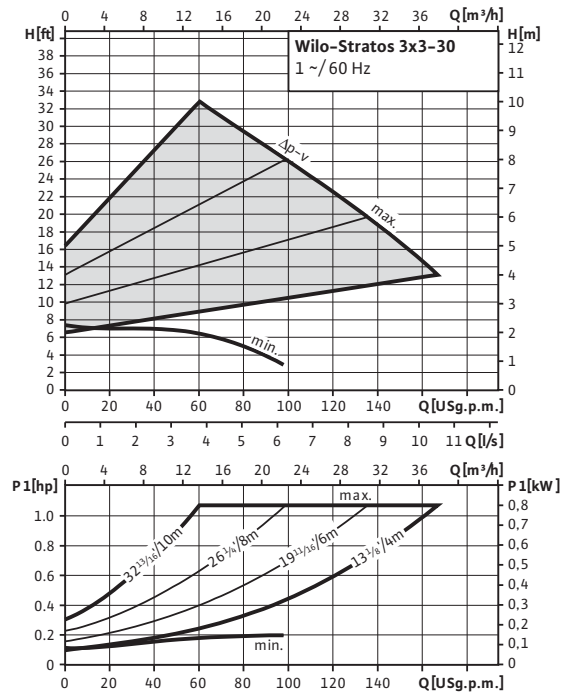
## Pump curves Wilo-Stratos

### Wilo-Stratos 3x3-30

$\Delta p-c$  (constant)

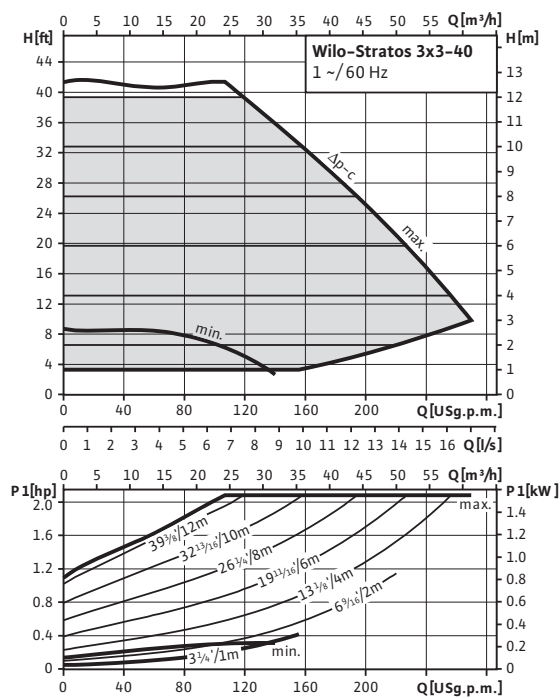


$\Delta p-v$  (variable)

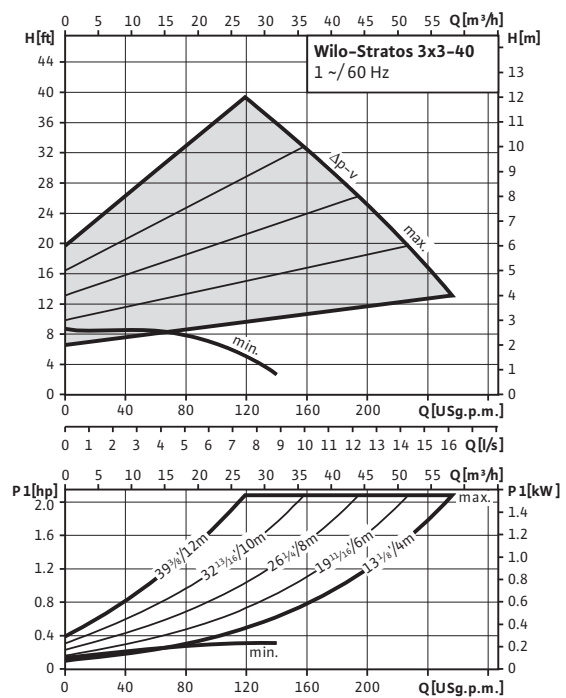


### Wilo-Stratos 3x3-40

$\Delta p-c$  (constant)



$\Delta p-v$  (variable)



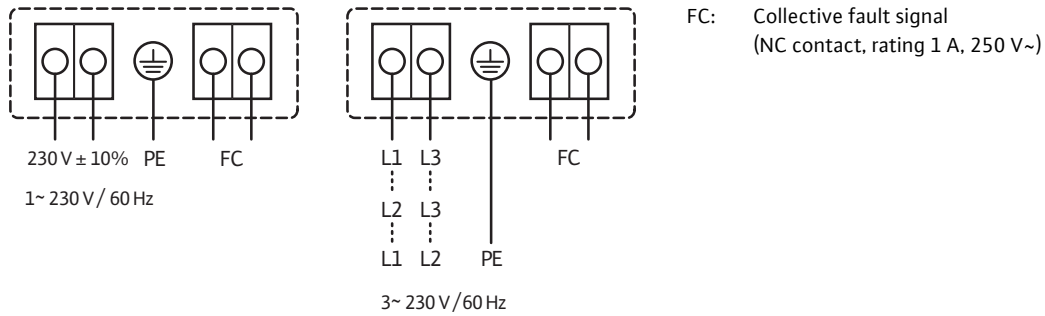
# Circulating Pumps

Wilo-Stratos



## Wiring diagrams, motor data

### Wiring diagramm



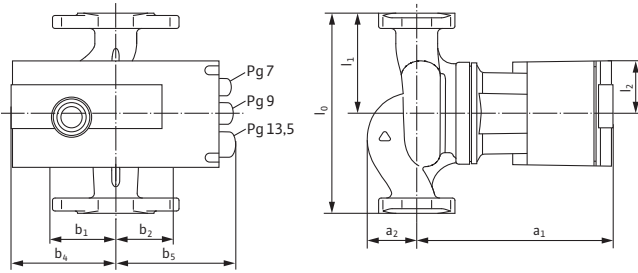
Motor data									
Wilo-Stratos...	Rated Power		Speed	Power consumption		Current 1~230 V	Current 3~230 V	Motor protection	Screwed cable gland
	P <sub>2</sub>		n	P <sub>1</sub>		I		-	-
	[hp]	[W]	[rpm]	[hp]	[W]	[A]		-	[in]
1.25x3-20	0.087	65	1400 - 3400	0.01 - 0.11	9 - 85	0.13 - 0.78	0.13 - 0.78	integrated	1x½/1x¼
1.25x3-25	0.134	100	1400 - 3700	0.01 - 0.17	9 - 130	0.13 - 1.20	0.13 - 1.20		1x½/1x¼
1.25x3-30	0.268	200	1600 - 4800	0.02 - 0.42	16 - 310	0.16 - 1.37	0.16 - 1.37		1x½/1x¼
1.25x3-35	0.268	200	1600 - 4800	0.02 - 0.42	16 - 310	0.16 - 1.37	0.16 - 1.37		1x½/1x¼
1.5x3-40	0.469	350	1400 - 4600	0.03 - 0.60	21 - 450	0.16 - 2.01	0.16 - 2.01		1x½/1x¼
2x3-35	0.671	500	1400 - 4600	0.03 - 0.83	21 - 620	0.16 - 2.70	0.16 - 2.70		1x½/1x¼
3x3-30	0.872	650	950 - 3300	0.05 - 1.07	38 - 800	0.28 - 3.50	0.28 - 3.50		1x½/1x¼
3x3-40	1.743	1300	900 - 3300	0.05 - 2.08	40 - 1550	0.30 - 6.80	0.30 - 6.80		1x½/1x¼

# Circulating Pumps

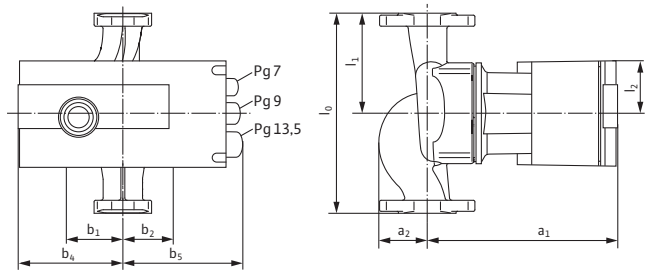
Wilo-Stratos

## Dimensions, weights

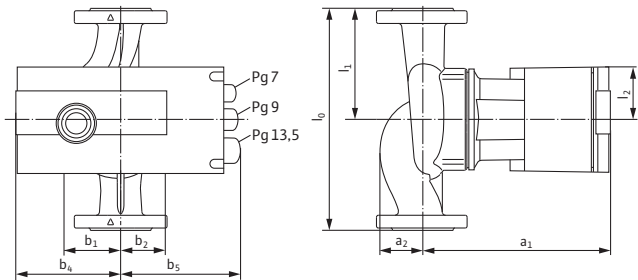
Drawing no.: 1



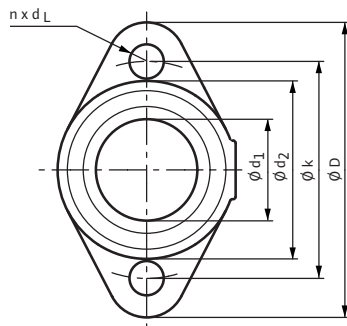
Drawing no.: 2



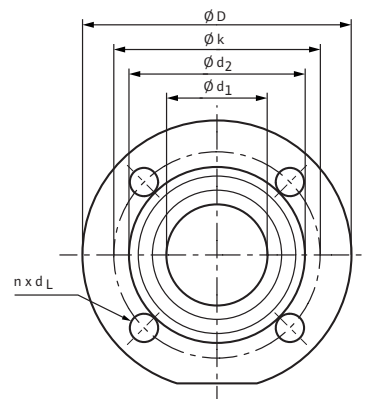
Drawing no.: 3



Drawing no.: 4



Drawing no.: 5



# Circulating Pumps

Wilo-Stratos



## Dimensions, weights

### Dimensions, weights

Wilo-Stratos...	Flange diameter		Pump dimensions									
	DN		l <sub>0</sub>		l <sub>1</sub>		l <sub>2</sub>		a <sub>1</sub>		a <sub>2</sub>	
	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]
1.25x3-20	1.25	32	6 1/2	165	3 1/4	82.5	1 7/8	49	7 1/8	182	1 11/16	43
1.25x3-25	1.25	32	6 1/2	165	3 1/4	82.5	1 7/8	49	7 1/8	182	1 11/16	43
1.25x3-30	1.25	32	8 1/2	216	4 1/4	108	2 3/16	55	8	204	1 7/8	48
1.25x3-35	1.25	32	8 1/2	216	4 1/4	108	2 3/16	55	7 7/8	201	1 15/16	50
1.5x3-40	1.50	40	10	254	5	127	2 9/16	66	9 15/16	252	2 7/16	62
2x3-35	2.00	50	11	279	5 1/2	139.5	2 9/16	66	10 1/16	256	2 3/8	62
3x3-30	3.00	80	14	356	7	178	3 1/16	78	12 13/16	325	3 3/8	87
3x3-40	3.00	80	14	356	7	178	3 1/16	78	12 15/16	329	3 9/16	90

### Dimensions, weights (continuation)

Wilo-Stratos...	Pump dimensions								Weight approx. net		Drawing No.
	b <sub>1</sub>		b <sub>2</sub>		b <sub>4</sub>		b <sub>5</sub>		-		-
	[in]	[mm]	[in]	[mm]	[in]	[mm]	[in]	[mm]	[lbs]	[kg]	-
1.25x3-20	2 1/8	54	1 7/8	47.5	3 9/16	90	4 1/2	114	9.3	4.2	1
1.25x3-25	2 1/8	54	1 7/8	47.5	3 9/16	90	4 1/2	114	9.3	4.2	1
1.25x3-30	2 1/2	63	2 3/16	55	4 3/16	106	4 3/4	120	19.8	9.0	1
1.25x3-35	2 3/8	61	2 3/16	55	4 3/16	106	4 3/4	120	19.8	9.0	1
1.5x3-40	2 13/16	72	2 9/16	65.5	4 11/16	119	5 3/8	136	30.9	14.0	2
2x3-35	3 3/16	81.5	2 9/16	65.5	4 11/16	119	5 3/8	136	37.2	15.5	3
3x3-30	4	101	3 1/4	82	6 1/8	155	6 7/16	164	41.9	19.0	3
3x3-40	4 7/16	113	3 9/16	90	6 1/8	155	6 7/16	164	68.3	31.0	3

### Flange dimensions

Wilo-Stratos...	Flange	Nominal diameter		Flange dimension pump										Drawing No.	
		DN		ø D		ø d <sub>1</sub>		ø d <sub>2</sub>		ø k		n x d <sub>L</sub>			-
		[in]	[mm]	in	[mm]	[mm]	[mm]	[in]	[mm]	[in]	[mm]	[units x in]	[units x mm]		-
1.25x3-20 1.25x3-25 1.25x3-30 1.25x3-35	Non ANSI (oval 90° rotated)	1.25	32	4 3/4	121	1 3/8	35	2 7/8	73	3 1/2	89	2 x ø 1/2	2 x ø 14	4	
1.5x3-40	Non ANSI (oval)	1.5	40	4 3/4	121	1 5/8	41	2 7/8	73	3 1/2	89	2 x ø 1/2	2 x ø 14	4	
2x3-35	Non ANSI (round)	2.0	50	5 1/4	133	2 1/16	53	3 7/16	87	4	102	4 x ø 1/2	4 x ø 14	5	
3x3-30 3x3-40	ANSI R.F. Class 125 ASTMA 126	3.0	80	7 9/16	192	3 1/4	82	5 1/16	128	6	152	4 x ø 3/4	4 x ø 19	5	