GRUNDFOS
PRODUCT GUIDE

BM 4", 6" and 8"

Booster Modules
60 Hz and 50 Hz

BE > THINK > INNOVATE >

GRUNDFOS

Contents

Mission

- to successfully develop, produce, and sell high quality pumps and pumping systems worldwide, contributing to a better quality of life and healthier environment

GBJ - Bjerringbro, Denmark

GMU - Fresno, California

GPU - Olathe, Kansas

GMX - Monterrey, Mexico

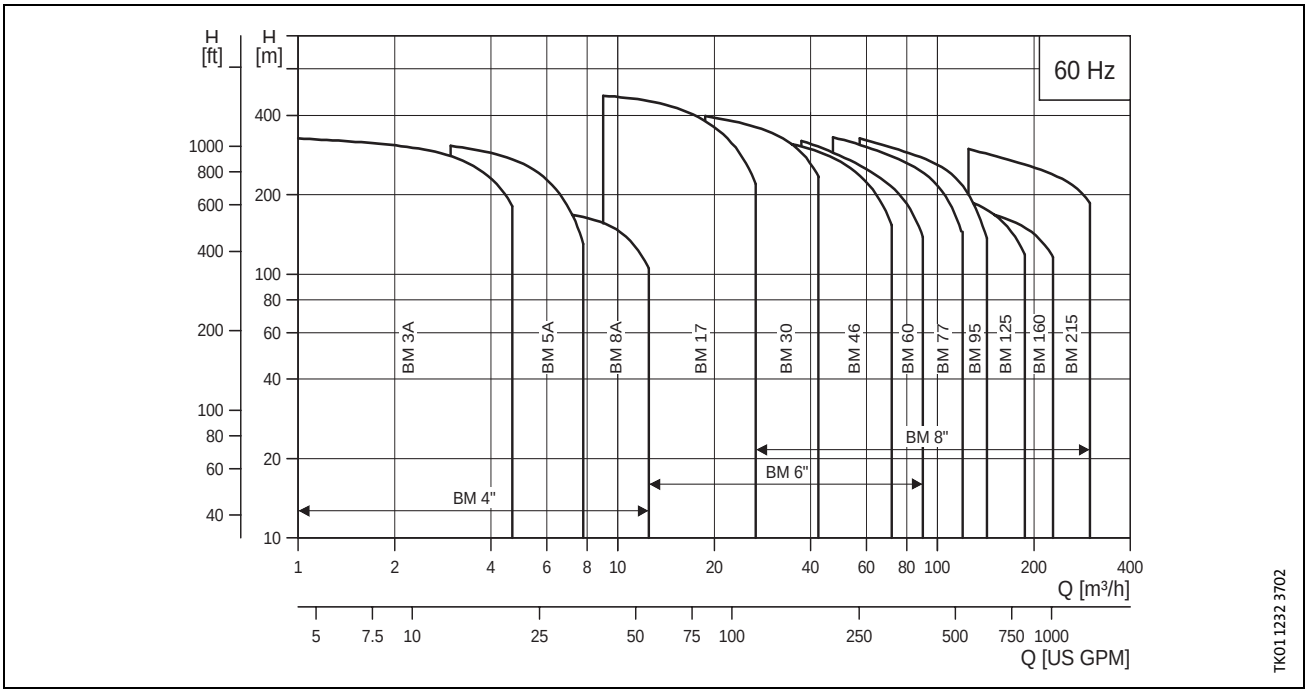
GPA - Allentown, Pennsylvania

GCA - Oakville, Ontario

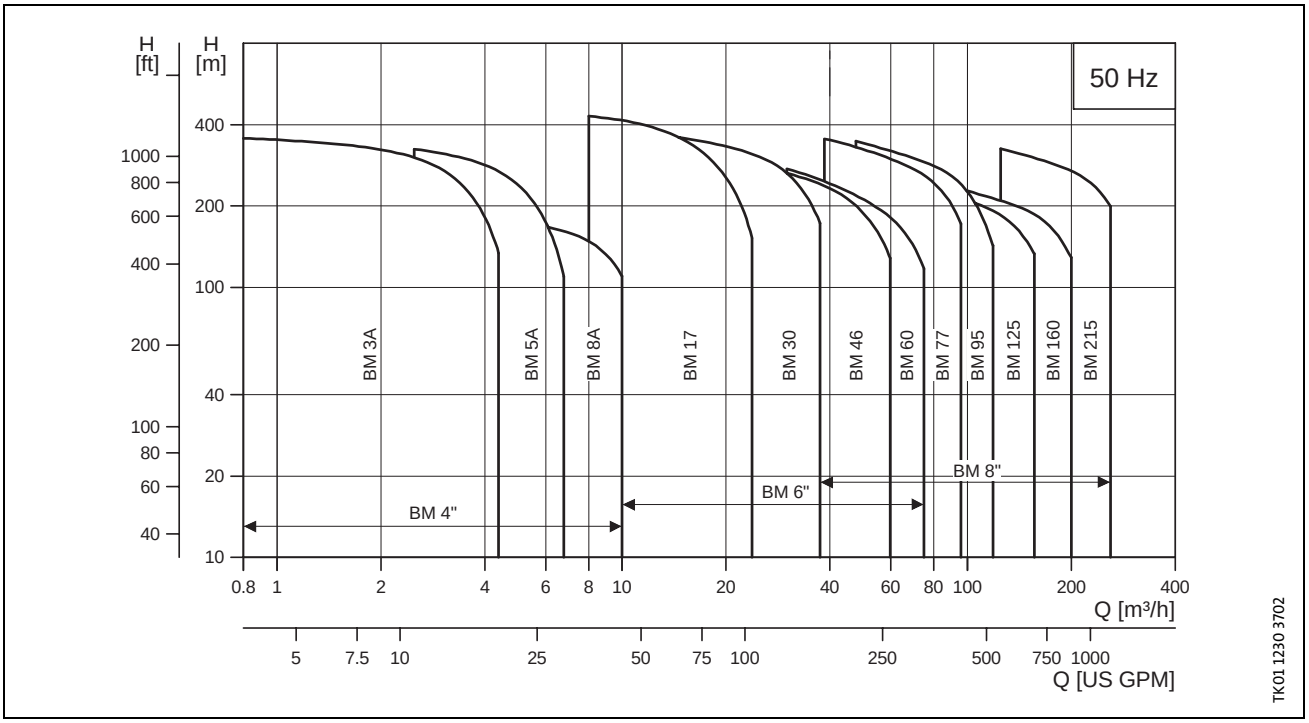
- One of the 3 largest pump companies in the world
- World headquarters in Denmark
- North American headquarters in Kansas City - Manufacturing in Fresno, California
- 60 companies in 40 countries
- More than 10 million pumps produced annually worldwide
- North American companies operating in USA, Canada and Mexico
- Continuous reinvestment in growth and development enables the company to

  BE responsible, **THINK** ahead, and **INNOVATE**

Performance range, 60 Hz



Performance range, 50 Hz



Applications

Introduction

The Grundfos BM booster module is suitable for industrial and water supply applications requiring increased system pressure.

The booster module is the optimum solution for applications requiring ...

- sealless pumps,
- pumps capable of handling high system pressures,
- high heads,
- quiet operation,
- a minimum of maintenance.

Typical applications

BM booster modules are suitable for the following typical applications:

- Water treatment such as:
  - reverse osmosis in domestic water supply systems, hospitals, laboratories, chemical, electronics and metal industries.
  - ultra-filtration in chemical and galvanic industries, painting workshops, metal and mineral industries.
- Liquid transfer.
- Pressure boosting.
- Closed circulation systems with a high static pressure.

Standard pumps

The following standard pumps are available for the BM booster modules:

- SP 3A, SP 5A and SP 8A in 4" sleeve.
- SP 17, SP 30, SP 46 and SP 60 in 6" sleeve.
- SP 30, SP 46, SP 60, SP 77, SP 95 and SP 125 in 8" sleeve.

Note: The BM booster modules are supplied without non-return valves.

Pumped liquids

Thin, non-explosive liquids not containing abrasive particles or fibers. The liquid must not attack the pump materials chemically or mechanically.

If the density and/or viscosity of the pumped liquid is higher than that of water, it may be necessary to use motors with a higher output than the standard output stated.

Construction

Modified standard submersible pumps are used for the BM booster modules. Pump and motor are centered in the stainless steel sleeve.

Both sleeve ends can be connected to the piping by means of victaulic couplings.

A terminal box for electrical connection is placed at the discharge end.

The sleeve of 4", 6" and 8" modules is supplied with straight pipe inlet and outlet.

BM 4" is also available with 90° bends at the suction and discharge ends.

Motor

Asynchronous submersible squirrel-cage motor of the canned type with water-lubricated bearings.

Voltages:	3 x 440-480 V +6/–10%, 60 Hz. 3 x 575 V +6/-10%, 60 Hz. 3 x 380-415 V +6/–10%, 50 Hz.
Enclosure class:	IP 54/IP 58.
Insulation class:	B (for MS 4000). F (for MS 6000 and Franklin 8").
Special versions:	Other voltages are available on request.

Operating conditions

Flow:	60 Hz: Max. 335 m³/h, 1475 USGPM. 50 Hz: Max. 280 m³/h, 1233 USGPM.
Head:	Max. 470 m/1542 ft. Higher performance is possible by connection in series or in parallel.
Temperature:	Max. 40°C/104°F.

(Contact Grundfos in case of higher temperature.)

Outlet pressure:	Max. 80 bar/1160 p.s.i.

Recommended inlet pressure at 25°C/77°F

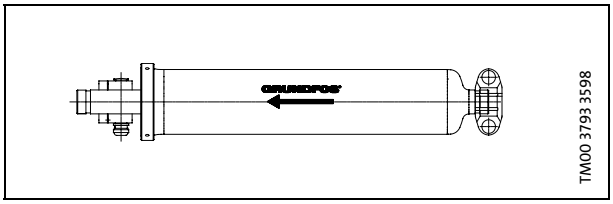
BM Type	Min.		Max.	
	[bar]	[p.s.i.]	[bar]	[p.s.i.]
4"	0.5	7.25	60	870
6"	0.5	7.25	50	725
8"	1	14.5	25	363

Rated speed:	60 Hz: 3450 rpm 50 Hz: 2870 rpm
Sound-pressure level:	The sound-pressure level of BM 4" and BM 6" booster modules is below 70 dB(A). The sound-pressure level of BM 8" is below 80 dB(A).

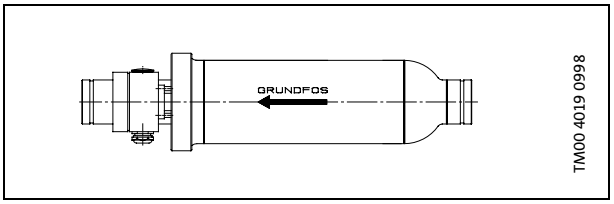
See also "Limitations to operation" on page 9.

BM types and versions

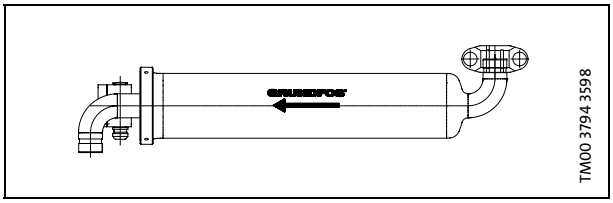
BM 4" Straight version



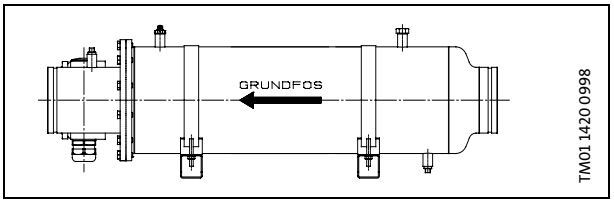
BM 6"



BM 4" Elbow version

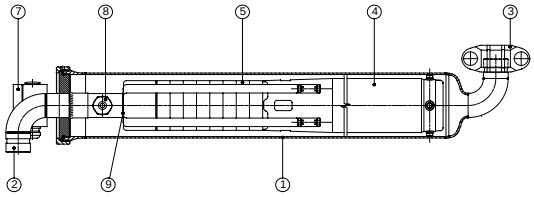


BM 8"

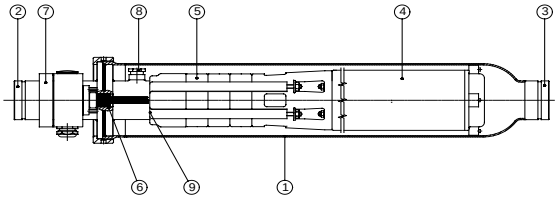


Sectional drawings

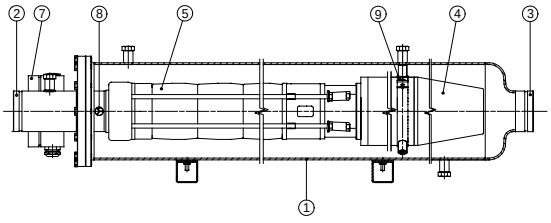
BM 4"



BM 6"



BM 8"

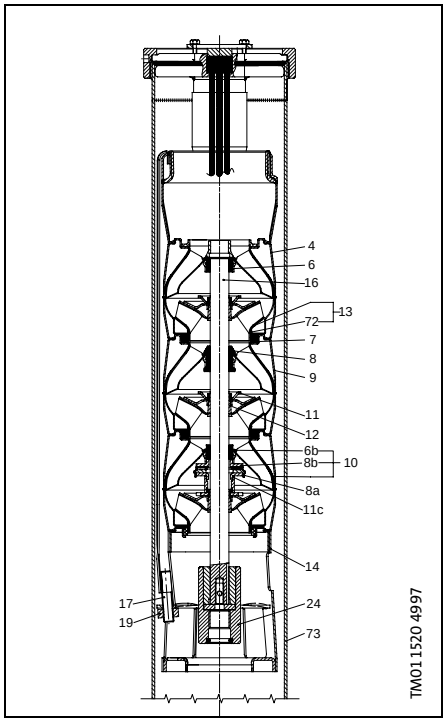


1. Sleeve
2. Discharge connection
3. Suction connection
4. Submersible motor
5. Submersible pump
6. Cable inlet
7. Terminal box
8. Inlet bypass valve
9. Locking system for BM 8".
   BM 4" and BM 6" have left-hand threads for locking.

Materials

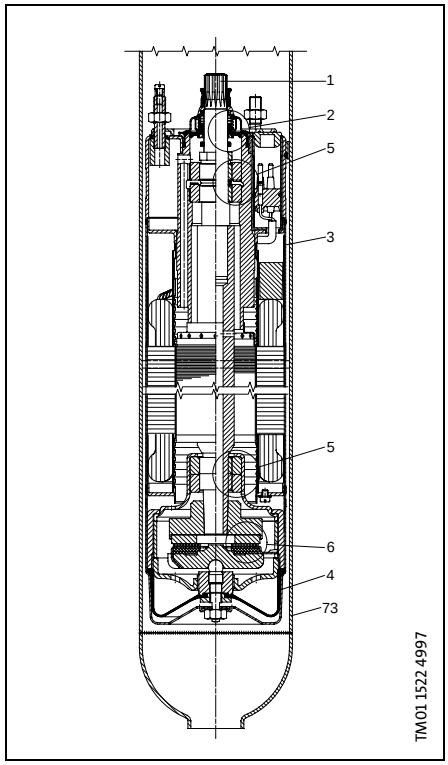
Pos.	Components	Materials	N-version		R-version	
			W.-Nr.	AISI	W.-Nr.	AISI
3	Valve seat	Stainless steel/ NBR	1.4401	316	1.4539	904L
4	Top chamber	Stainless steel	1.4401	316	1.4539	904L
6 6b	Top bearing Bottom bearing	Stainless steel/ NBR	1.4401	316	1.4539	904L
7	Neck ring	NBR/PPS				
8	Intermediate bearing	NBR				
8a	Spacing washer for stop ring	Carbon/graphite, PTFE				904L
8b	Stop ring	Stainless steel	1.4401	316	1.4539	904L
9	Chamber	Stainless steel	1.4401	316	1.4539	904L
10	Bottom chamber with stop ring	Stainless steel	1.4401	316	1.4539	904L
11	Nut for split cone	Stainless steel	1.4401	316	1.4539	904L
11c	Nut for stop ring	Stainless steel	1.4401	316	1.4539	904L
12	Split cone	Stainless steel	1.4401	316	1.4539	904L
13	Impeller	Stainless steel	1.4401	316	1.4539	904L
14	Suction inter-connector	Stainless steel	1.4401	316	1.4539	904L
15	Strainer	Stainless steel	1.4401	316	1.4539	904L
16	Shaft	Stainless steel	1.4460	329	1.4462	SAF 2205
17	Strap	Stainless steel	1.4401	316	1.4539	904L
19	Nut for strap	Stainless steel	1.4401	316	1.4539	904L
24	Coupling	Stainless steel	1.4460	329	1,4462	SAF 2205
72	Wear ring	Stainless steel	1.4401	316	1.4539	904L
73	Sleeve	Stainless steel	1.4401	316	1.4539	904L

Example: BM 46



MS 4000/MS 6000						
Pos.	Components	Materials	N-version		R-version	
			W.-Nr.	AISI	W.-Nr.	AISI
1	Shaft	Stainless steel	1.4462	SAF 2205	1.4462	SAF 2205
2	Shaft seal	Tungsten carbide/ ceramic				
3	Motor sleeve	Stainless steel	1.4539	904L	1.4539	904L
4	Motor end shield	Stainless steel	1.4539	904L	1.4539	904L
5	Radial bearing	Ceramic/tungsten carbide				
6	Thrust bearing	Ceramic/carbon				
	Rubber parts	NBR/Buna N				
Franklin						
1	Shaft	Stainless steel/ carbon	1.4542	630		
2	Shaft seal	Ceramic/Buna N +1.4301				
3	Motor sleeve		1.4571	316Ti		
4	Motor end shield	Stainless steel	1.4401	316		
5	Radial bearing	Steel/carbon				
6	Thrust bearing	Steel/carbon				
	Rubber parts	NBR/Buna N				

Example: MS 4000



Technical data

Type key

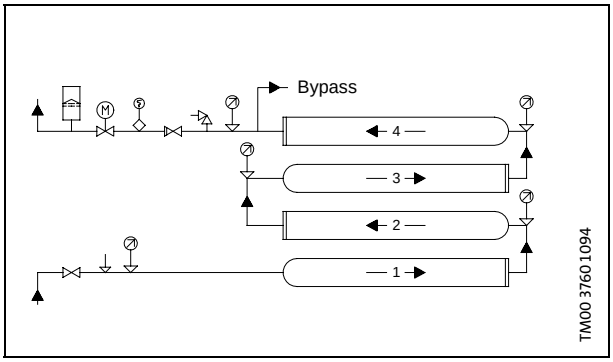
Example	BM	3	(A)	24	N	E
Booster module						
Pump type /nominal flow rate in m³/h						
Generation						
Number of stages						

Materials	Sleeve	Pump	Motor
BM 4"			
N =	1.4401/316	1.4401/316	1.4539/904
NE =	1.4401/316	1.4401/316	1.4539/904
R =	1.4539/904L	1.4539/904L	1.4539/904L
BM 6"			
N =	1.4401/316	1.4401/316	1.4539/904
NE =	1.4401/316	1.4401/316	1.4539/904
R =	1.4539/904L	1.4539/904L	1.4539/904L
BM 8"			
N =	1.4401/316	1.4401/316	1.4401/316
NE =	1.4401/316	1.4401/316	1.4401/316

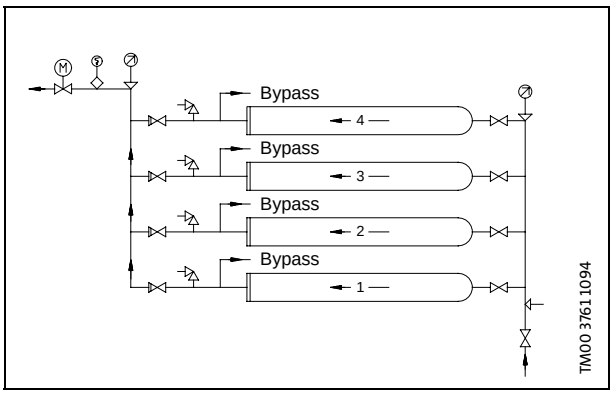
NE = Pump rubber parts in FKM.

Installation

Modules connected in series and in parallel



Booster unit with four modules connected in series, mounted above each other.

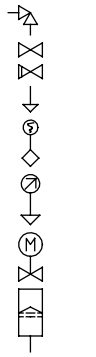


Booster unit with four modules connected in parallel, mounted above each other.

Connections

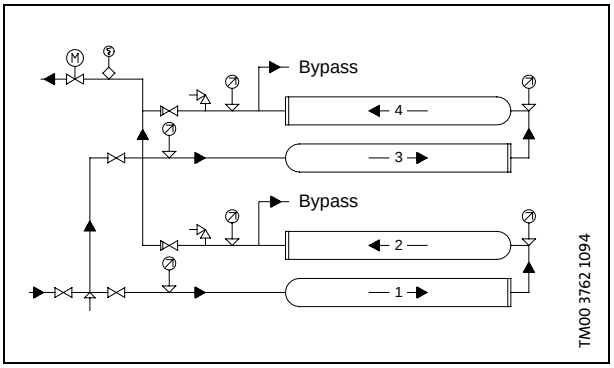
Size	BM type	Victaulic coupling Style 77
BM 4"	BM 3A - BM 8A	1¼" / ø42 mm
BM 6"	BM 17 - BM 60	3" / ø89 mm
BM 8"	BM 30 - BM 46	3" / ø89 mm
BM 8"	BM 60	4" / ø114 mm
BM 8"	BM 77 - BM 95	5" / ø139 mm
BM 8"	BM 125	6"/ ø168 mm

Legend

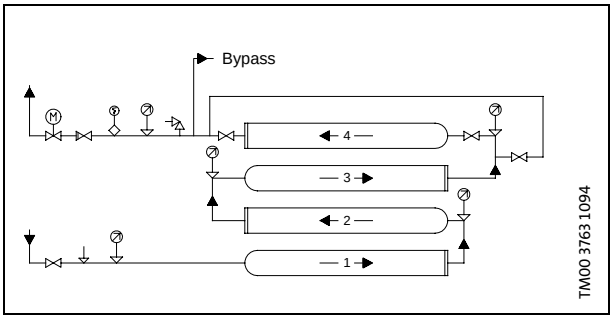


Air escape valve
Closing valve
Non-return valve
Pressure switch
Flow switch
Pressure gauge
Motor operated valve
Diaphragm

TM00 3764 1094



Booster unit with two modules connected in series and in parallel, mounted above each other.



Booster unit with four modules connected in series with bypass, mounted above each other.

Limitations to operation

The capacity of the modules should always be kept within the recommended flow and pressure range of each individual pump.

Recommended flow at 25°C/77°F				
Type	m³/h		US GPM	
	50 Hz	60 Hz	50 Hz	60 Hz
BM 3A	0.8-4.4	1.0-4.7	3.5-20	4.4-21
BM 5A	2.5-6.8	3.0-7.7	11-30	13-34
BM 8A	4.0-10	4.8-10	17-44	21-44
BM 17	8.0-24	7.0-29	35-105	31-128
BM 30	15-37	19-45	66-162	84-198
BM 46	24-60	28-72	106-264	123-317
BM 60	35-75	37-90	154-330	163-396
BM 77	38-96	48-120	167-423	211-528
BM 95	47-118	57-143	206-519	251-629
BM 125	62-156	75-187	273-686	330-823

Recommended pressure						
BM Type	Inlet pressure				Outlet pressure	
	Min.		Max.*		Max.*	
	[bar]	[p.s.i.]	[bar]	[p.s.i.]	[bar]	[p.s.i.]
4"	0.5	7.25	60	870	80	1160
6"	0.5	7.25	50	725	80	1160
8"	1	14.5	25	362	70	1015

* Note: If the max. inlet/outlet pressure is exceeded, a safety valve should be installed.

Maximum permissible liquid temperature						
Motor	Maximum liquid temperature		Minimum flow velocity past the motor		Minimum flow	
	°C	°F	m/s	ft/s	m³/h	gpm
GRUNDFOS 4"	40	104	0.15	0.5	0.8	3.5
GRUNDFOS 6"	40	104	0.15	0.5	5.5	24.2
FRANKLIN 8"	30	86	0.16	0.5	18.5	81.5

Automatic control devices

To protect the pumps against dry-running and to ensure a minimum flow of cooling water past the motors, the system must be fitted with flow and pressure control devices.

A pressure switch on the suction side is dimensioned in accordance with the estimated inlet pressure. At a pressure lower than 0.5 bar/7.25 p.s.i. for BM 4" and BM 6", and 1 bar/14.5 p.s.i. for BM 8", an alarm is given and shortly after the pumps will stop (max 15 sec).

All discharge connections to the system should be fitted with flow switches which will stop the system at the set minimum flows.

The above control devices ensure a correct inlet pressure and a minimum flow of cooling water past the motor.

Flow switch cutting-in is adjusted for a minimum time delay equivalent to the maximum starting frequency of the system.

Checking of operation

Depending on the number of operating hours of the pumps, the following should be checked at suitable intervals:

1. Flow.
2. Starting frequency.
3. Control and protective devices.
4. Liquid temperature.
5. Minimum flow through modules during operation.

Performance data

Curve conditions

The guidelines below apply to the curves on the following pages.

1. The curves apply to actual speeds at 60 Hz or 50 Hz.
   The **bold** curves indicate the permissible duty range.
   The thin curves are only intended as a guide.
   All curves are based on average values according to ISO 9906 Annex A.
   If a minimum performance is required, individual measurements must be carried out.
   The curves apply to a kinematic viscosity of 1 mm²/s (1 cSt).
   The power curve P_2/HP shows pump power input per stage.
   The efficiency curve Eta(η) shows pump efficiency, i.e. pump without motor.
   The performance tests have been made at a water temperature of 20°C (68°F).
   Test liquid: airless water.
2. The conversion between head (m/ft) and pressure p (kPa/psi) has been made for water with a density of ρ = 1000 kg/m³ (62.4 lb/ft³). If the density differs from this value, the created pressure will be proportional to the density.

Series operation (High pressure, see page 8)

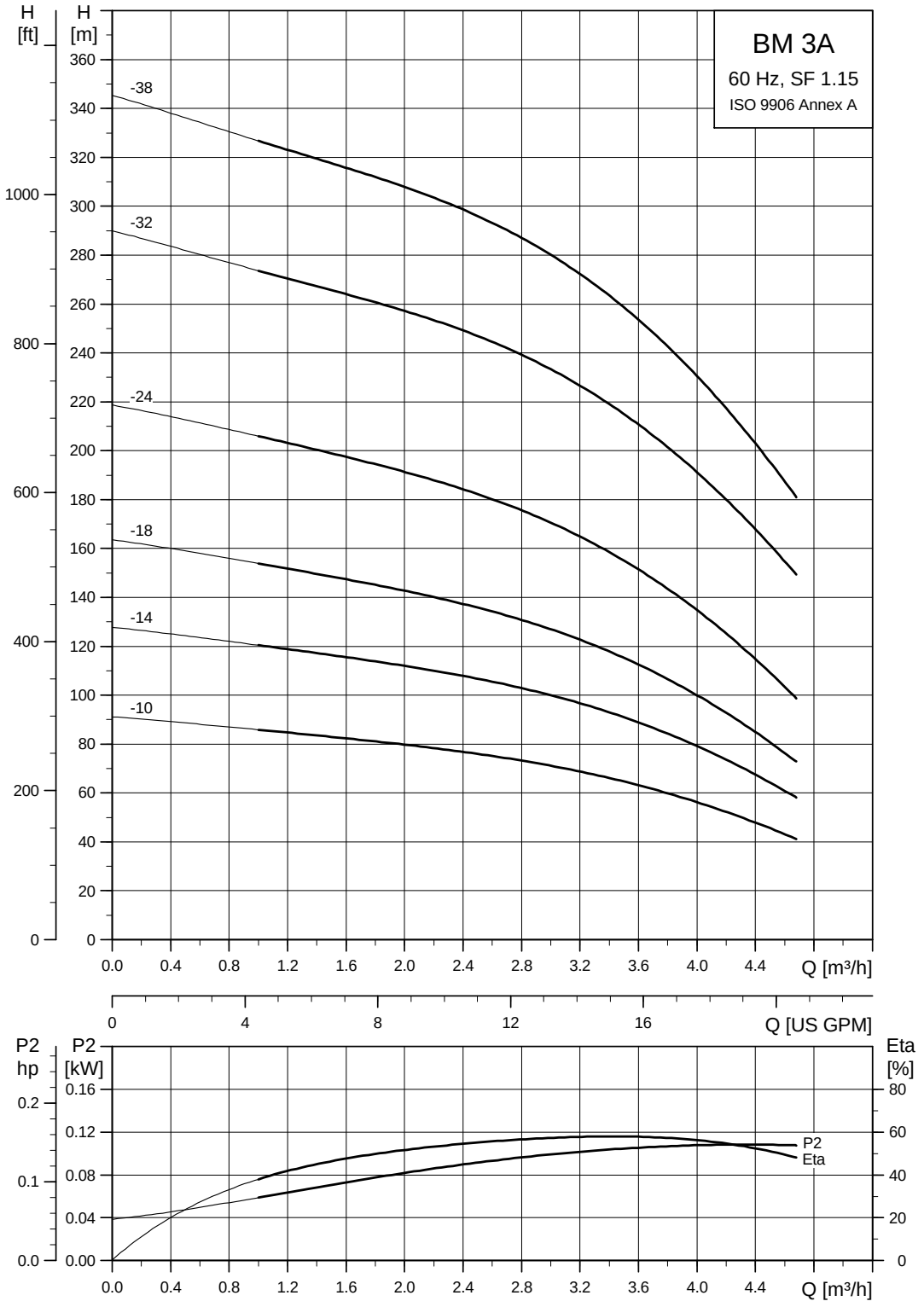
If a pressure higher than that of a single module is required, several modules are connected in series. The resulting pressure is found by adding the pressures of each individual module. The flow will be the same as for one pump.

Note: Make sure that the maximum inlet pressure is not exceeded, see "Operating conditions" page 5.

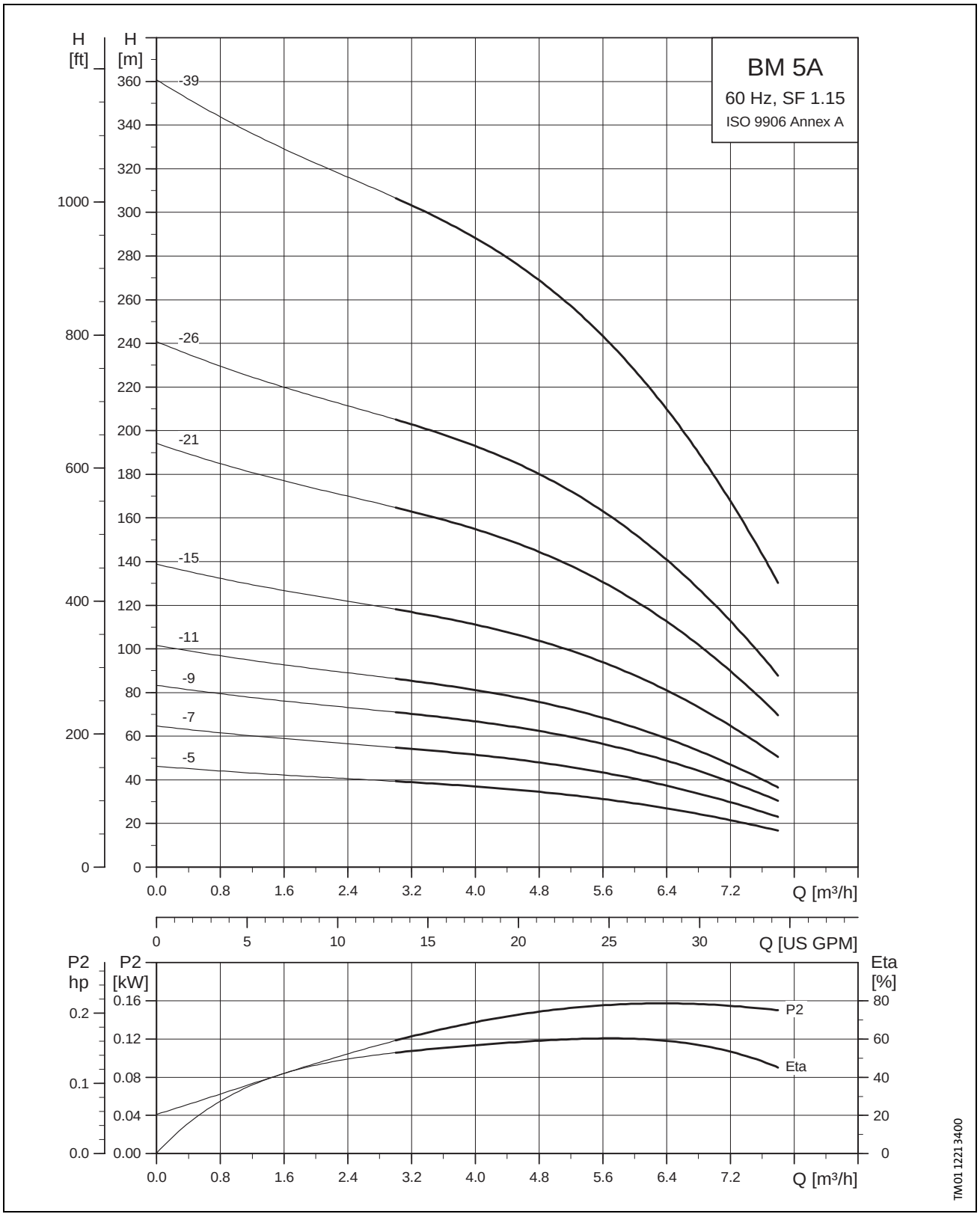
Parallel operation (High flow, see page 8)

If a flow higher than that of a single module is required, several modules are connected in parallel. The resulting flow is found by adding the flows of each individual module. The pressure will be the same as for one pump.

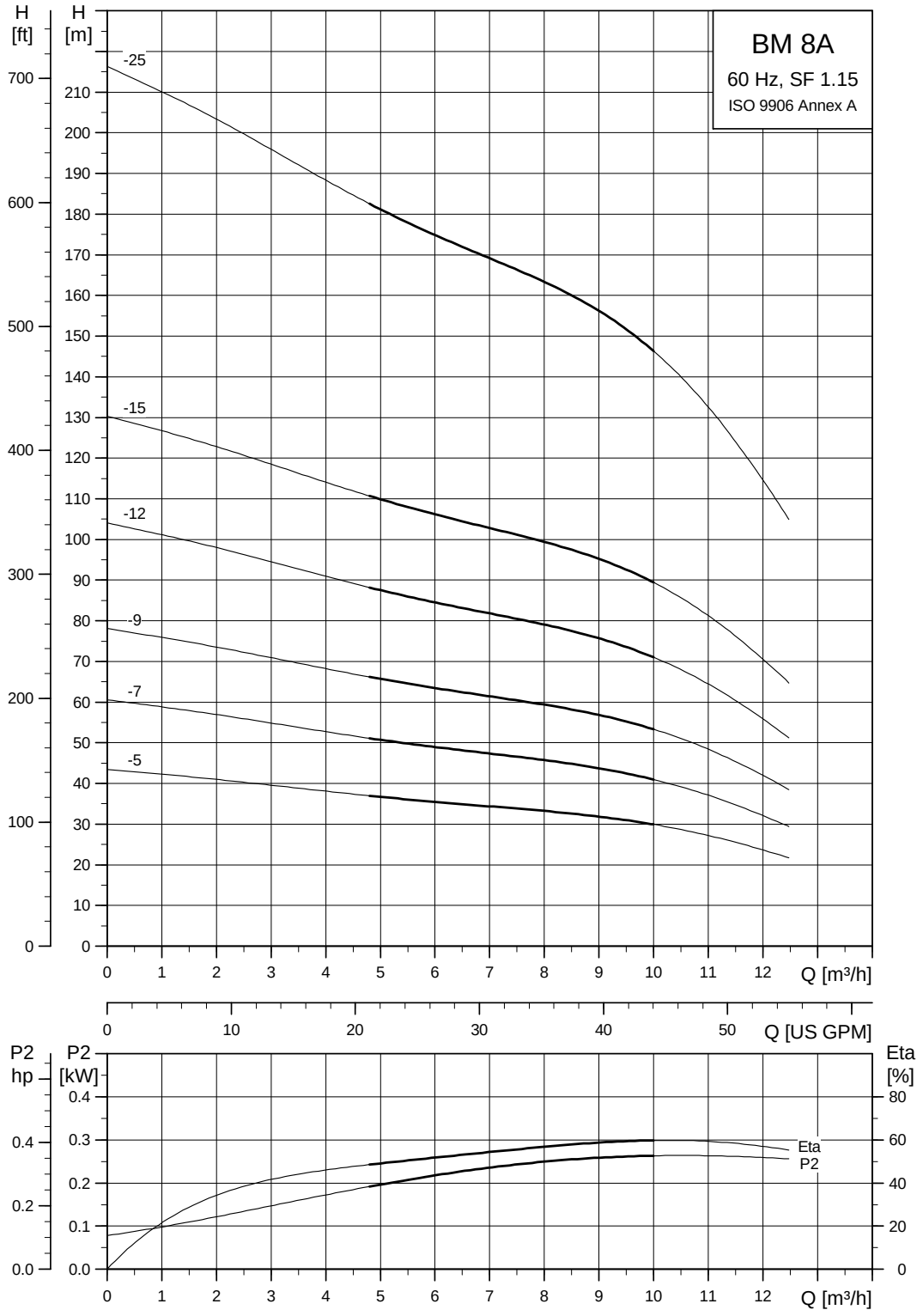
Performance curves



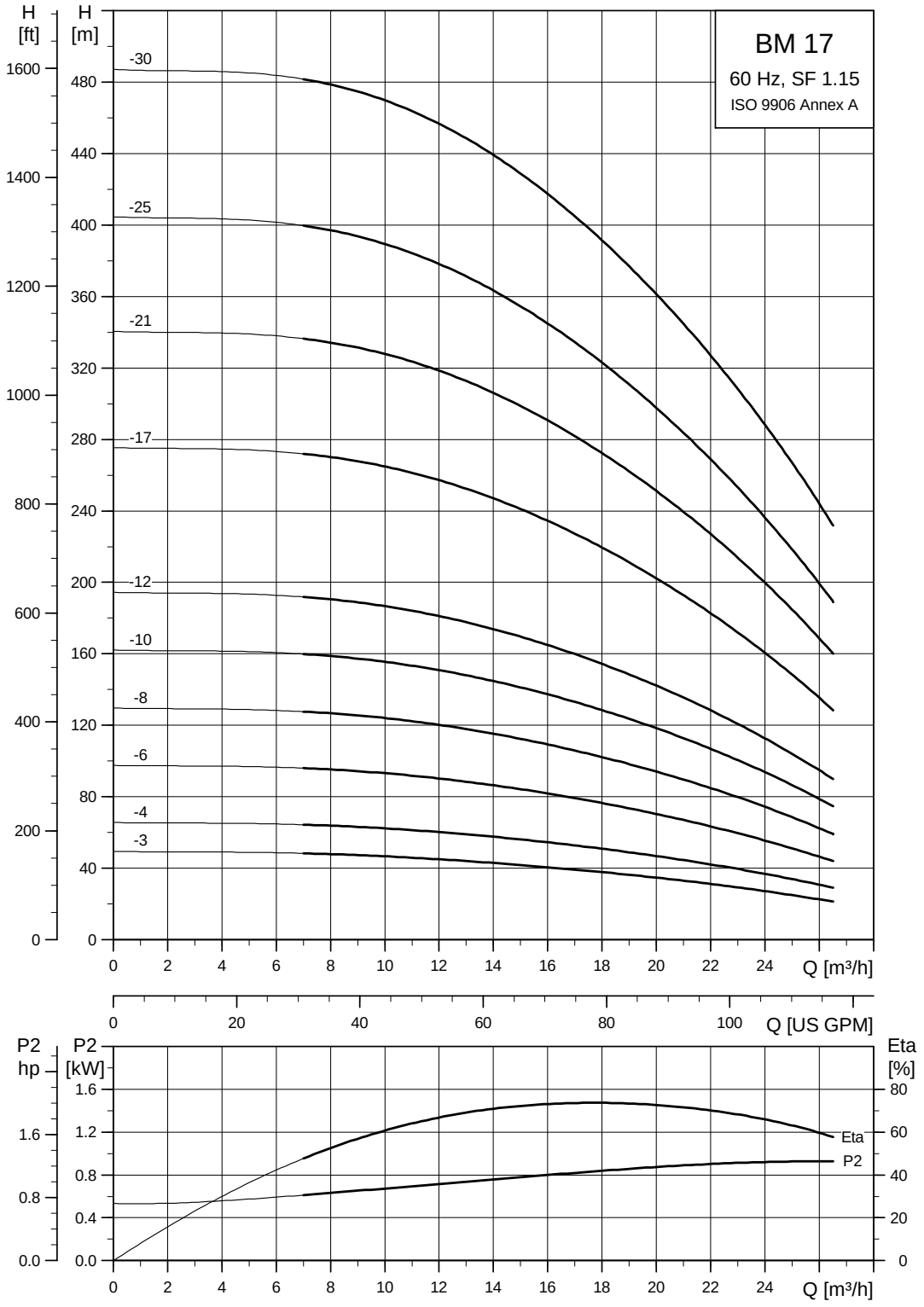
Performance curves



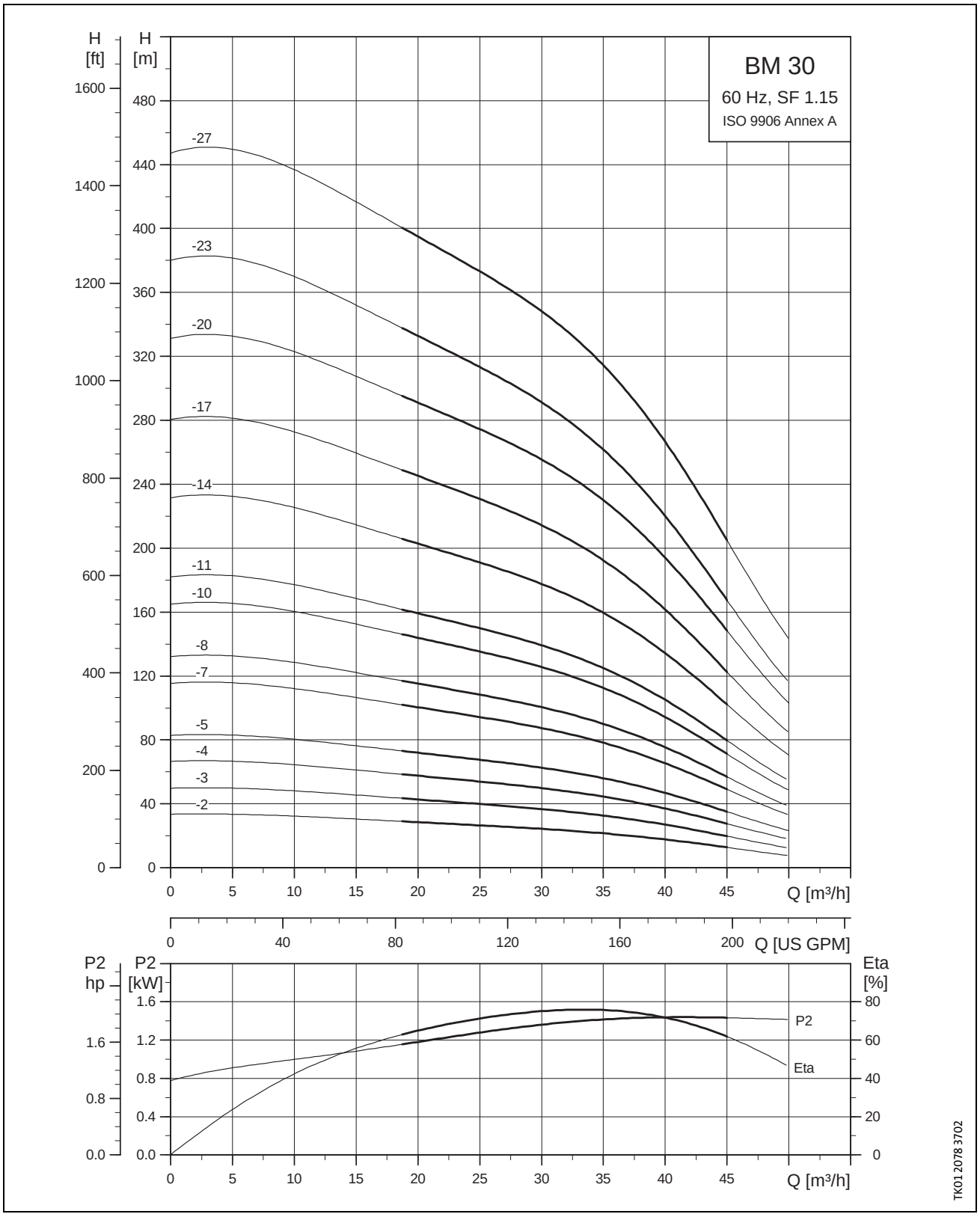
Performance curves



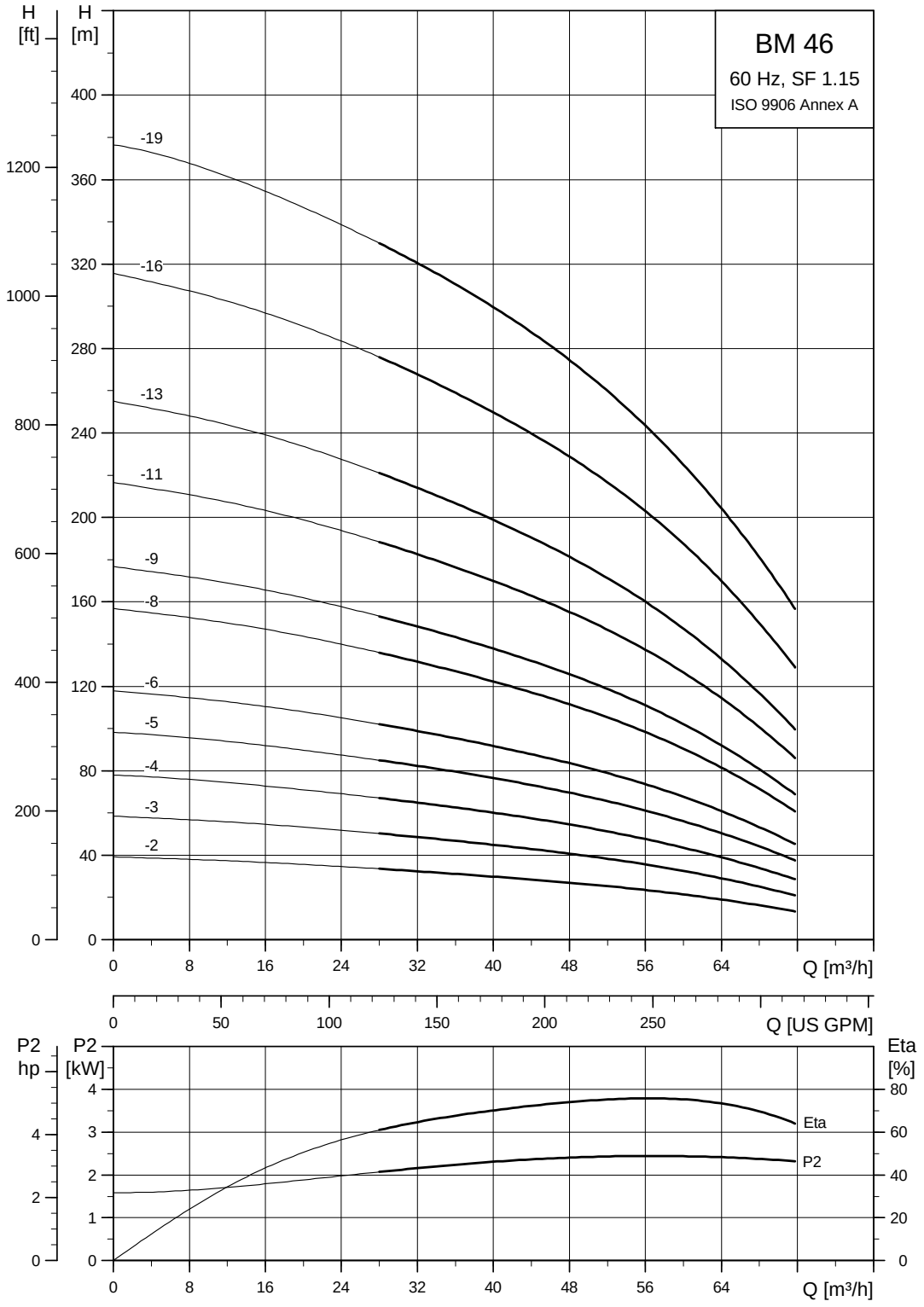
Performance curves



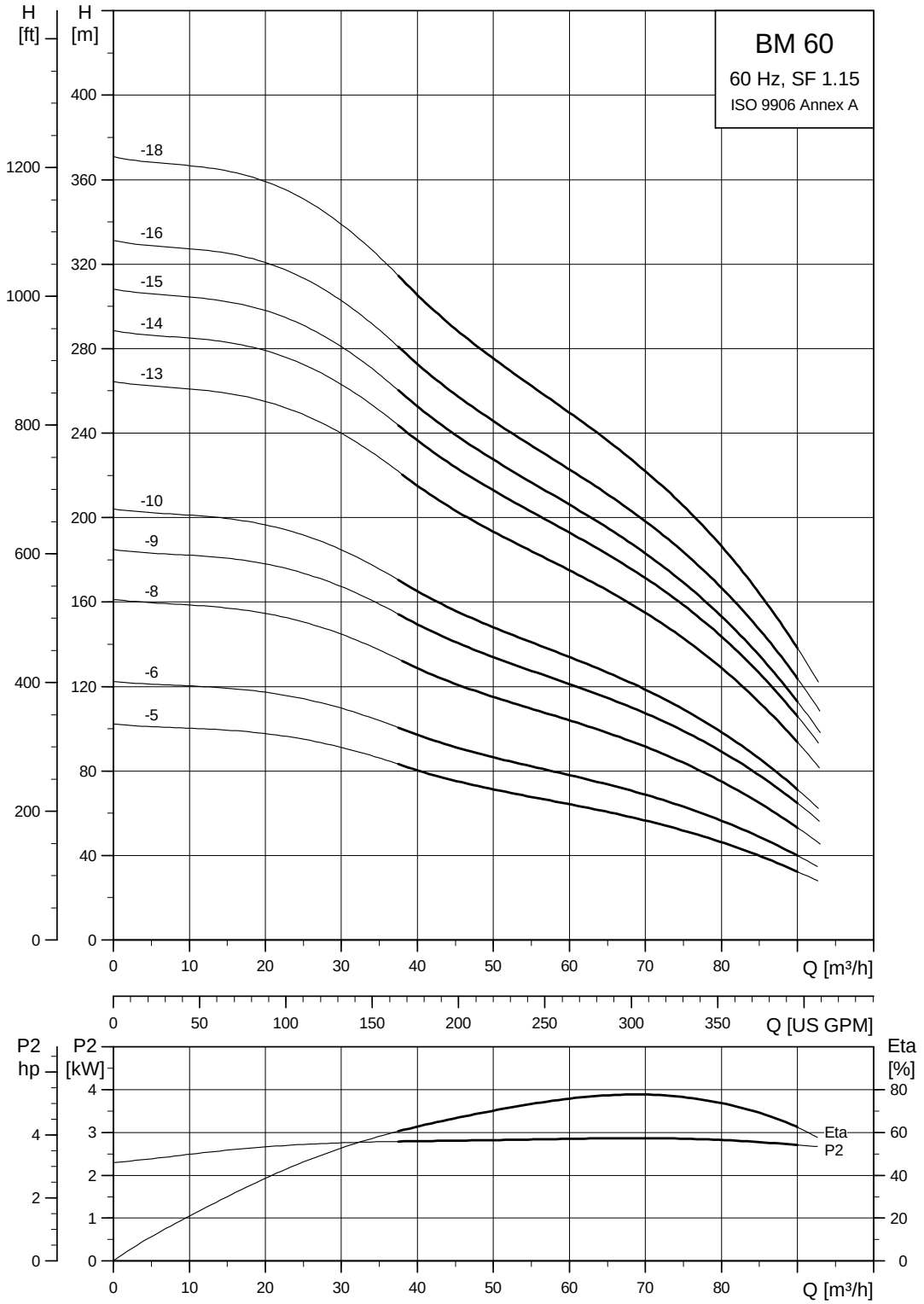
Performance curves



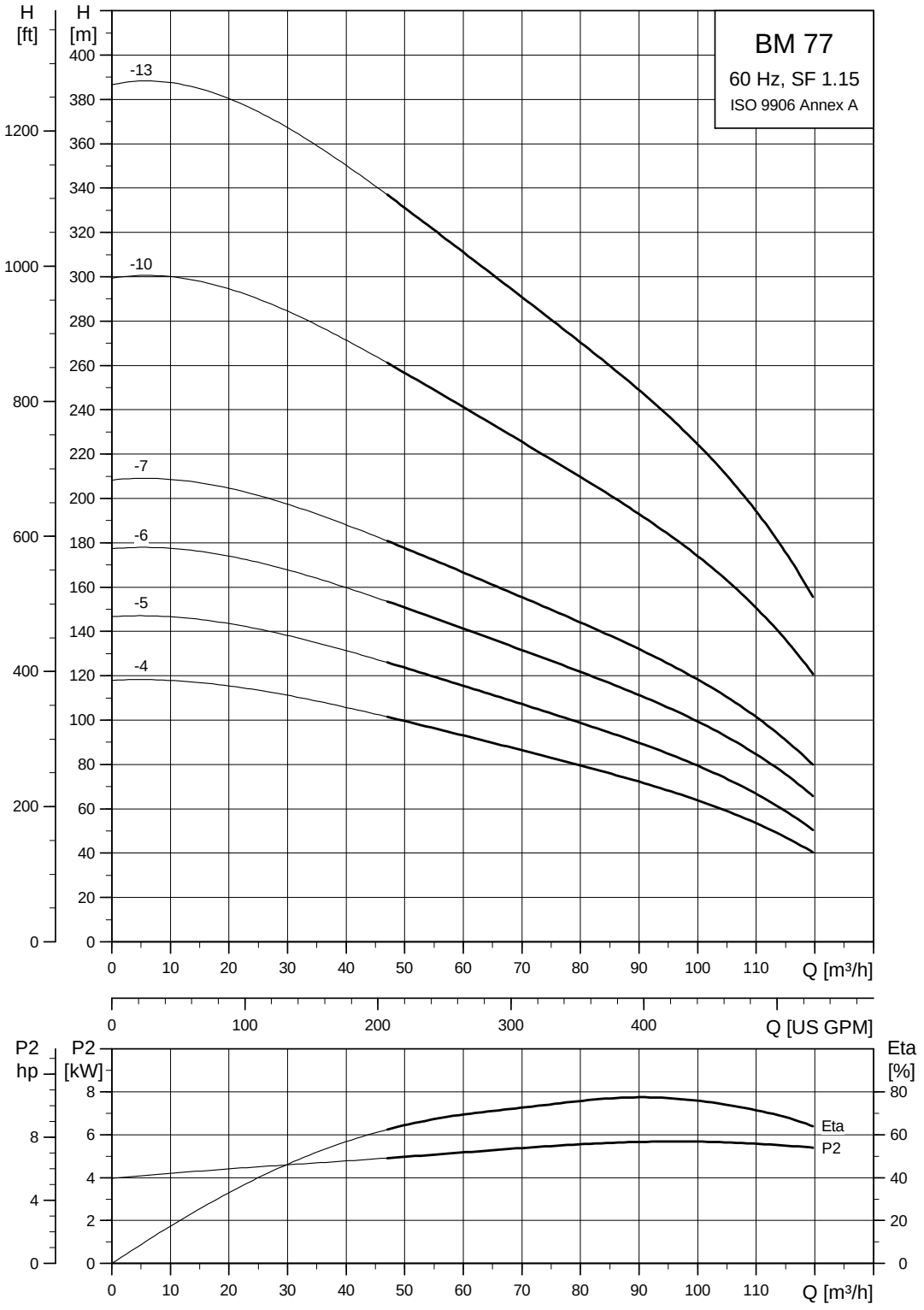
Performance curves



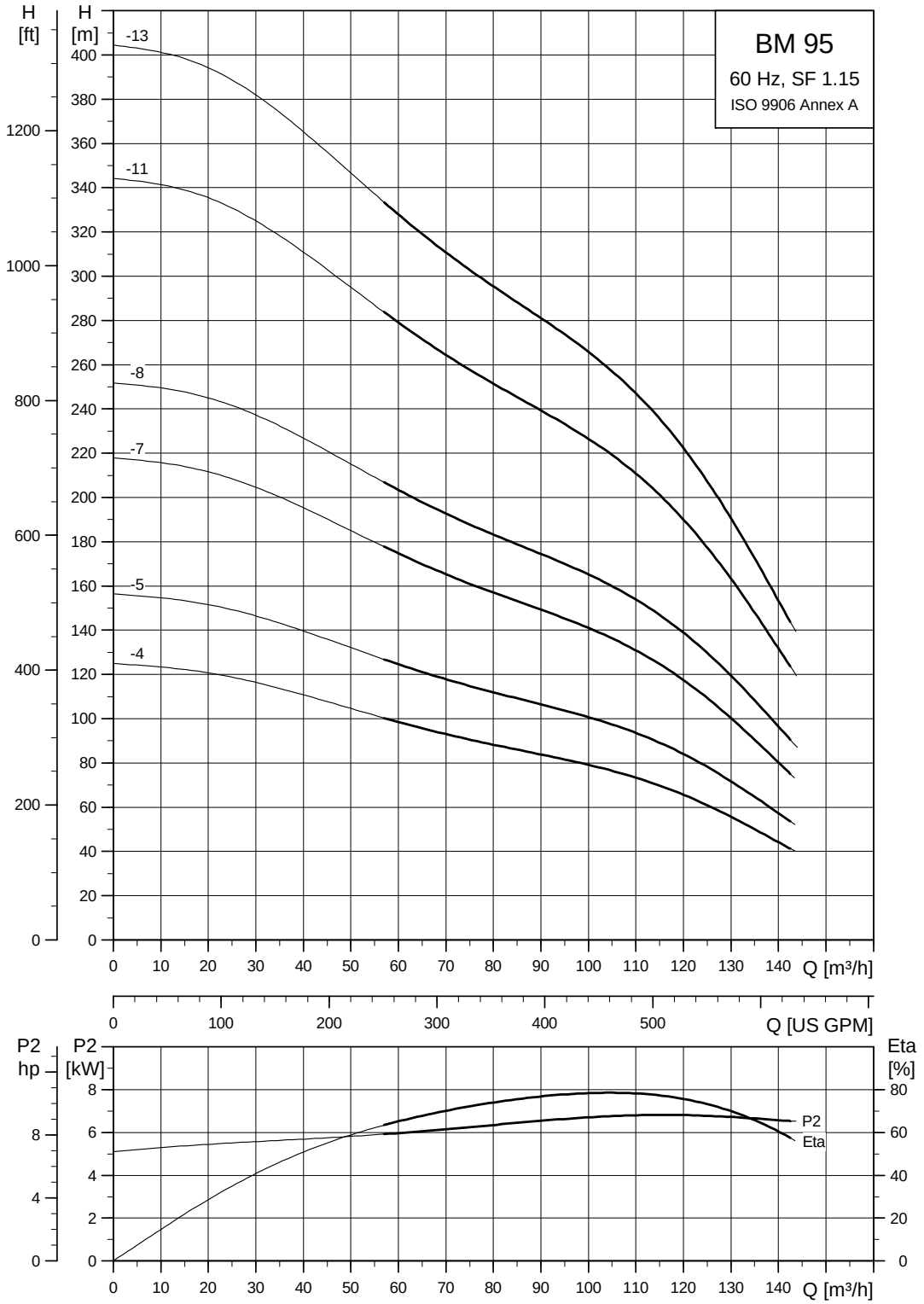
Performance curves



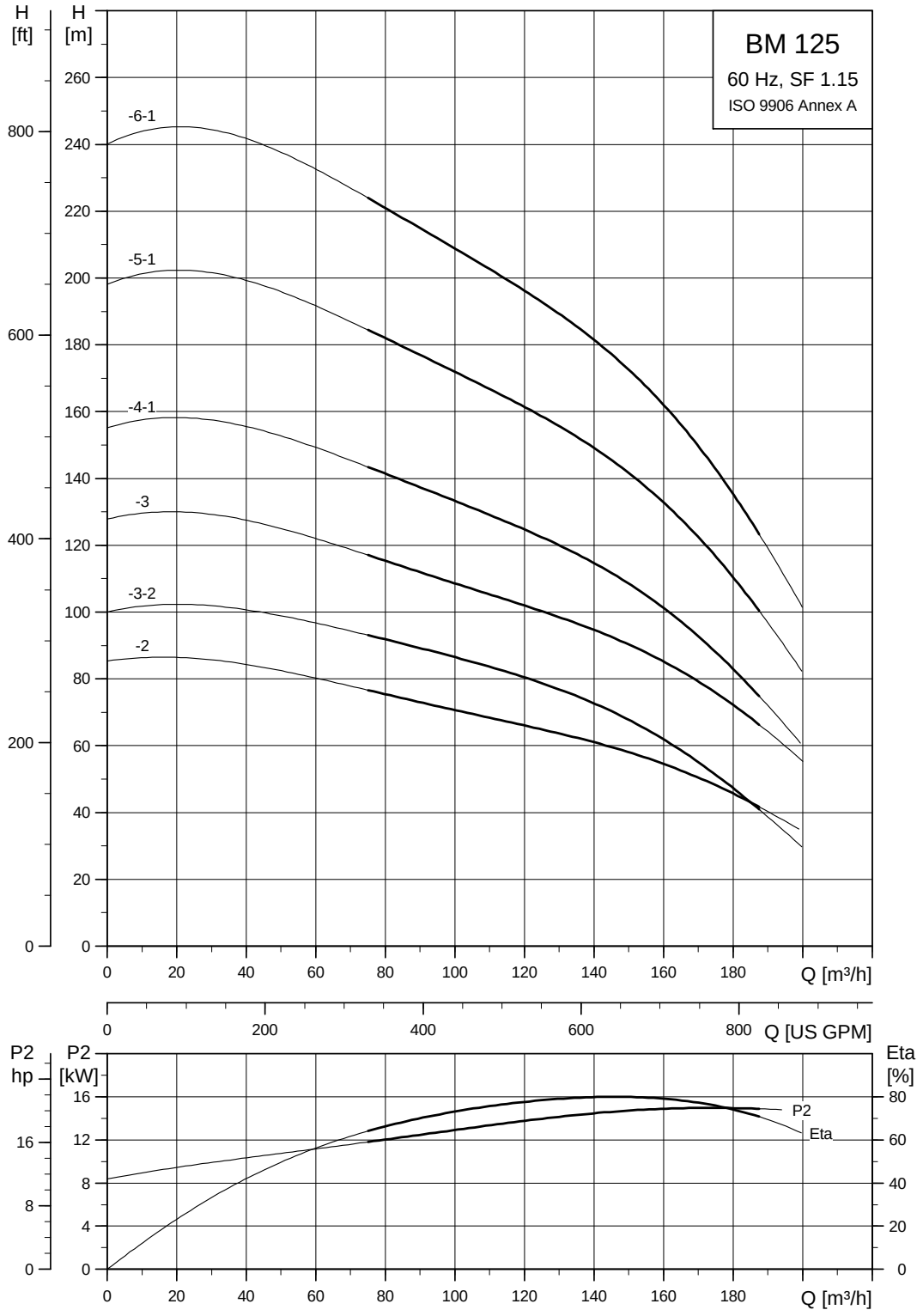
Performance curves



Performance curves



Performance curves



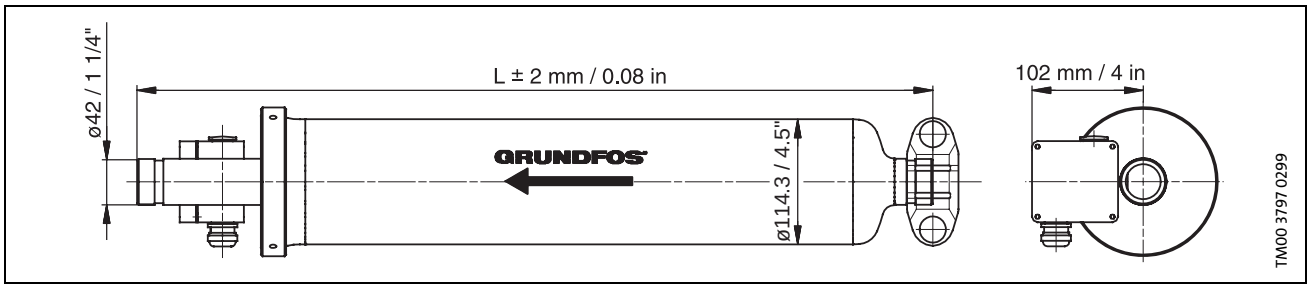
Order data

Booster module 4", 3 x 440 - 480 V, 60 Hz, (with straight pipe connections)

Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Product no. R-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]				Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 3A-10	0.75	1.0	2.30-2.10	1222	48.1	10733610	10743610	-	32.0	70.4	38.0	83.6	0.095	3.35
BM 3A-14	1.1	1.5	3.05-2.95	1222	53.9	10733614	10743614	-	35.0	77.0	41.0	90.2	0.100	3.53
BM 3A-18	1.5	2.0	4.10-4.15	1369	53.9	10733618	10743618	-	37.0	81.4	43.0	94.6	0.100	3.53
BM 3A-24	2.2	3.0	5.65-6.05	1640	64.6	10733624	10743624	-	43.0	94.6	49.0	107.8	0.120	4.24
BM 3A-32	4.0	5.5	9.45-9.45	1986	78.2	10733632	10743632	-	49.0	107.8	55.0	121.0	0.142	5.01
BM 3A-38	4.0	5.5	9.45-9.45	2112	83.1	10733638	10743638	-	56.0	123.2	63.0	138.6	0.149	5.26
BM 5A- 5	0.75	1.0	2.30-2.10	1222	48.1	05733605	05743605	05773605	30.0	66.0	36.0	79.2	0.095	3.35
BM 5A- 7	0.75	1.0	2.30-2.10	1222	48.1	05733607	05743607	05773607	31.0	68.2	37.0	81.4	0.095	3.35
BM 5A- 9	1.1	1.5	3.05-2.95	1222	48.1	05733609	05743609	05773609	32.0	70.4	38.0	83.6	0.095	3.35
BM 5A-11	1.5	2.0	4.10-4.15	1222	48.1	05733611	05743611	05773611	33.0	72.6	39.0	85.8	0.095	3.35
BM 5A-15	2.2	3.0	5.65-6.05	1369	53.9	05733615	05743615	05773615	38.0	83.6	44.0	96.8	0.100	3.53
BM 5A-21	3.0	4.0	7.40-7.75	1640	64.6	05733621	05743621	05773621	42.0	92.4	48.0	105.6	0.120	4.24
BM 5A-26	4.0	5.5	9.45-9.45	1758	69.2	05733626	05743626	05773626	49.0	107.8	55.0	121.0	0.126	4.45
BM 5A-39	5.5	7.5	12.8-12.8	2112	83.1	05733639	05743639	05773639	60.0	132.0	67.0	147.4	0.149	5.26
BM 8A- 5	1.1	1.5	3.05-2.95	1222	48.1	11733605	11743605	11773605	33.0	72.6	39.0	85.8	0.095	3.35
BM 8A- 7	1.5	2.0	4.10-4.15	1369	53.9	11733607	11743607	11773607	35.0	77.0	41.0	90.2	0.100	3.53
BM 8A- 9	2.2	3.0	5.65-6.05	1472	58.0	11733609	11743609	11773609	39.0	85.8	45.0	99.0	0.106	3.74
BM 8A-12	3.0	4.0	7.40-7.75	1758	69.2	11733612	11743612	11773612	43.0	94.6	49.0	107.8	0.126	4.45
BM 8A-15	4.0	5.5	9.45-9.45	1986	78.2	11733615	11743615	11773615	50.0	110.0	56.0	123.2	0.142	5.01
BM 8A-25	5.5	7.5	12.8-12.8	2346	92.4	11733625	11743625	11773625	63.0	138.6	70.0	154.0	0.170	6.00

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Dimensional sketch



One set of connecting fittings is required for each system (see "Accessories").

Order data

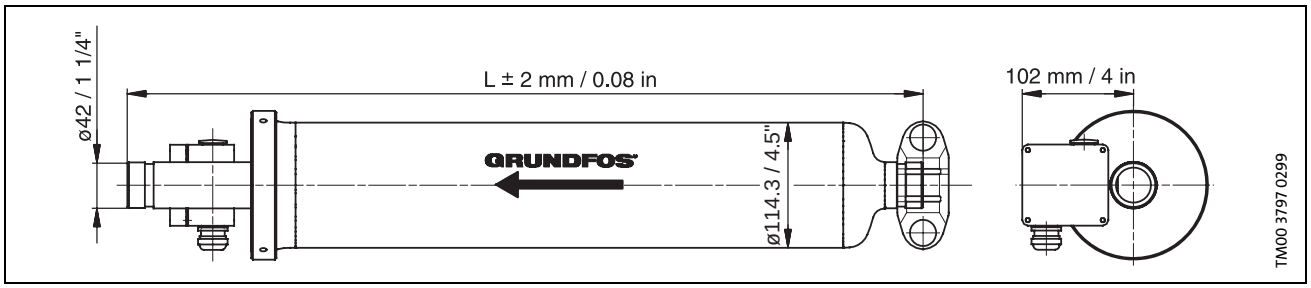
Booster module 4", 3 x 575 V, 60 Hz, (with straight pipe connections)*

Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Product no. R-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]				Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 3A-10	0.75	1.0	1.76	1222	48.1	10733910	10743910	-	32.0	70.4	38.0	83.6	0.095	3.35
BM 3A-14	1.1	1.5	2.40	1222	53.9	10733914	10743914	-	35.0	77.0	41.0	90.2	0.100	3.53
BM 3A-18	1.5	2.0	3.25	1369	53.9	10733918	10743918	-	37.0	81.4	43.0	94.6	0.100	3.53
BM 3A-24	2.2	3.0	4.65	1640	64.6	10733924	10743924	-	43.0	94.6	49.0	107.8	0.120	4.24
BM 3A-32	4.0	5.0	6.90	1986	78.2	10733932	10743932	-	49.0	107.8	55.0	121.0	0.142	5.01
BM 3A-38	4.0	7.5	10.0	2112	83.1	10733938	10743938	-	56.0	123.2	63.0	138.6	0.149	5.26
BM 5A- 5	0.75	1.0	1.76	1222	48.1	05733905	05743905	call factory	30.0	66.0	36.0	79.2	0.095	3.35
BM 5A- 7	0.75	1.0	1.76	1222	48.1	05733907	05743907	call factory	31.0	68.2	37.0	81.4	0.095	3.35
BM 5A- 9	1.1	1.5	2.40	1222	48.1	05733909	05743909	call factory	32.0	70.4	38.0	83.6	0.095	3.35
BM 5A-11	1.5	2.0	3.25	1222	48.1	05733911	05743911	call factory	33.0	72.6	39.0	85.8	0.095	3.35
BM 5A-15	2.2	3.0	4.65	1369	53.9	05733915	05743915	call factory	38.0	83.6	44.0	96.8	0.100	3.53
BM 5A-21	3.0	7.5	10.0	1640	64.6	05733921	05743921	call factory	42.0	92.4	48.0	105.6	0.120	4.24
BM 5A-26	4.0	5.0	6.90	1758	69.2	05733926	05743926	call factory	49.0	107.8	55.0	121.0	0.126	4.45
BM 5A-39	5.5	7.5	10.0	2112	83.1	05733939	05743939	call factory	60.0	132.0	67.0	147.4	0.149	5.26
BM 8A- 5	1.1	1.5	2.40	1222	48.1	11733905	11743905	call factory	33.0	72.6	39.0	85.8	0.095	3.35
BM 8A- 7	1.5	2.0	3.25	1369	53.9	11733907	11743907	call factory	35.0	77.0	41.0	90.2	0.100	3.53
BM 8A- 9	2.2	3.0	4.65	1472	58.0	11733909	11743909	call factory	39.0	85.8	45.0	99.0	0.106	3.74
BM 8A-12	3.0	5.0	6.90	1758	69.2	11733912	11743912	call factory	43.0	94.6	49.0	107.8	0.126	4.45
BM 8A-15	4.0	7.5	10.0	1986	78.2	11733915	11743915	call factory	50.0	110.0	56.0	123.2	0.142	5.01
BM 8A-25	5.5	7.5	10.0	2346	92.4	11733925	11743925	call factory	63.0	138.6	70.0	154.0	0.170	6.00

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

*Booster Module 4", 3 x 575 V, 60 Hz, (with elbow), available on request.

Dimensional sketch



One set of connecting fittings is required for each system (see "Accessories").

Order data

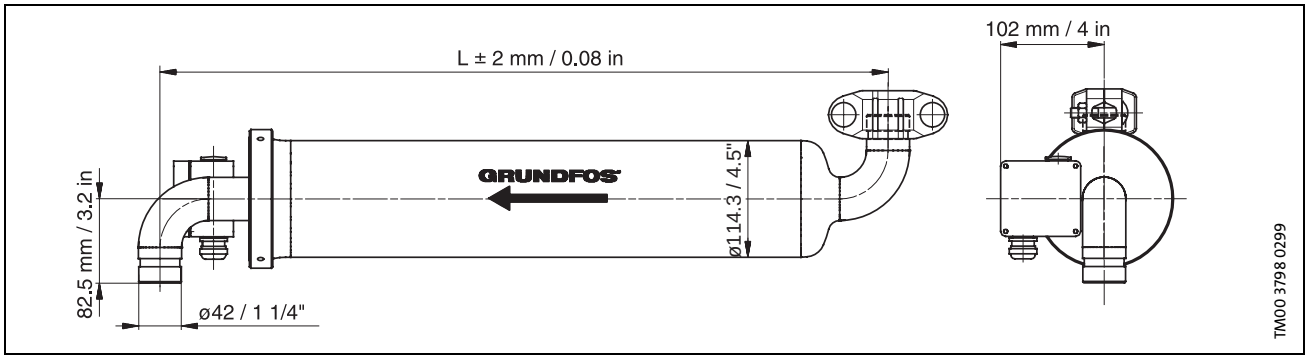
Booster module 4", 3 x 440 - 480 V, 60 Hz, (with elbow)*

Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]			Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 3A-10	0.75	1.0	2.30-2.10	1144	45.0	10753610	10763610	32.0	70.4	38.0	83.6	0.100	3.53
BM 3A-14	1.1	1.5	3.05-2.95	1291	50.8	10753614	10763614	35.0	77.0	41.0	90.2	0.100	3.53
BM 3A-18	1.5	2.0	4.10-4.15	1291	50.8	10753618	10763618	37.0	81.4	43.0	94.6	0.120	4.24
BM 3A-24	2.2	3.0	5.65-6.05	1562	61.5	10753624	10763624	43.0	94.6	49.0	107.8	0.142	5.02
BM 3A-32	3.0	4.0	7.40-7.75	1908	75.1	10753632	10763632	49.0	107.8	55.0	121.0	0.149	5.26
BM 3A-38	4.0	5.5	9.45-9.45	2034	80.1	10753638	10763638	56.0	123.2	63.0	138.6	0.095	3.35
BM 5A-5	0.75	1.0	2.30-2.10	1144	45.0	05753605	05763605	30.0	66.0	36.0	79.2	0.095	3.35
BM 5A-7	0.75	1.0	2.30-2.10	1144	45.0	05753607	05763607	31.0	68.2	37.0	81.4	0.095	3.35
BM 5A-9	1.1	1.5	3.05-2.95	1144	45.0	05753609	05763609	32.0	70.4	38.0	83.6	0.095	3.35
BM 5A-11	1.5	2.0	4.10-4.15	1144	45.0	05753611	05763611	33.0	72.6	39.0	85.8	0.100	3.53
BM 5A-15	2.2	3.0	5.65-6.05	1291	50.8	05753615	05763615	38.0	83.6	44.0	96.8	0.120	4.24
BM 5A-21	3.0	4.0	7.40-7.75	1562	61.5	05753621	05763621	42.0	92.4	48.0	105.6	0.126	4.45
BM 5A-26	4.0	5.5	9.45-9.45	1680	66.1	05753626	05763626	49.0	107.8	55.0	121.0	0.149	5.26
BM 5A- 39	5.5	7.5	12.8-12.8	2034	80.1	05753639	05763639	60.0	132.0	67.0	147.4	0.095	3.35
BM 8A-5	1.1	1.5	3.05-2.95	1144	45.0	11753605	11763605	33.0	72.6	39.0	85.8	0.100	3.53
BM 8A-7	1.5	2.0	4.10-4.15	1291	50.8	11753607	11763607	35.0	77.0	41.0	90.2	0.106	3.74
BM 8A-9	2.2	3.0	5.65-6.05	1394	54.9	11753609	11763609	39.0	85.8	45.0	99.0	0.126	4.45
BM 8A-12	3.0	4.0	7.40-7.75	1680	66.1	11753612	11763612	43.0	94.6	49.0	107.8	0.142	5.02
BM 8A-15	4.0	5.5	9.45-9.45	1908	75.1	11753615	11763615	50.0	110.0	56.0	123.2	0.170	6.00
BM 8A-25	5.5	7.5	12.8-12.8	2268	89.3	11753625	11763625	63.0	138.6	70.0	154.0	0.100	3.53

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

*Booster Module 4", 3 x 575 V, 60 Hz, (with elbow), available on request.

Dimensional sketch



One set of connecting fittings is required for each system (please see "Accessories").

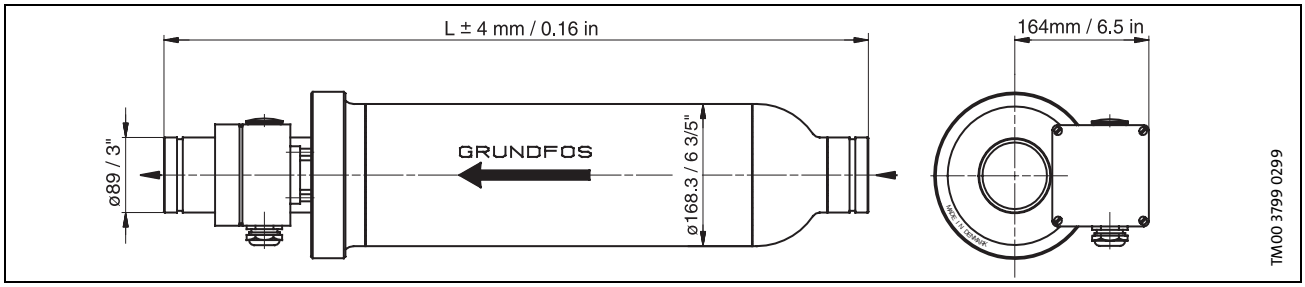
Order data

Booster module 6", 3 x 440 - 480 V, 60 Hz, (with straight pipe connections)

Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Product no. R-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]				Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 17-3	3.0	4.0	7.40 - 7.75	1550	61.0	12DJ3603	12DH3603	12DU3603	48.0	105.6	69.0	151.8	0.273	9.64
BM 17-4	4.0	5.5	9.45 - 9.45	1550	61.0	12DJ3604	12DH3604	12DU3604	53.0	116.6	76.0	167.2	0.273	9.64
BM 17-6	5.5	7.5	12.8 - 12.8	1850	72.8	12DJ3606	12DH3606	12DU3606	63.0	138.6	90.0	198	0.320	11.30
BM 17-8	7.5	10.0	17.4 - 17.4	1850	72.8	12DJ3608	12DH3608	12DU3608	79.0	173.8	113.0	248.6	0.320	11.30
BM 17-10	9.2	12.5	21.0 - 21.8	2100	82.7	12DJ3610	12DH3610	12DU3610	91.0	200.2	129.0	283.8	0.356	12.57
BM 17-12	11.0	15.0	24.0 - 25.5	2200	86.6	12DJ3612	12DH3612	12DU3612	97.0	213.4	138.0	303.6	0.374	13.21
BM 17-15	13.0	17.5	28.5 - 29.5	2500	98.4	12DJ3615	12DH3615	12DU3615	109.0	239.8	155.0	341.0	0.421	14.87
BM 17-17	15.0	20.0	32.5 - 33.5	2500	98.4	12DJ3617	12DH3617	12DU3617	115.0	253.0	163.0	358.6	0.421	14.87
BM 17-21	18.5	25.0	41.0 - 42.0	2850	112.2	12DJ3621	12DH3621	12DU3621	131.0	288.2	185.0	407.0	0.476	16.81
BM 17-25	22.0	30.0	46.5 - 48.0	3200	126.0	12DJ3625	12DH3625	12DU3625	147.0	323.4	208.0	457.6	0.530	18.72
BM 17-30	26.0	35.0	54.4 - 57.5	3800	149.6	12DJ3630	12DH3630	12DU3630	167.0	367.4	236.0	519.2	0.624	22.04
BM 30-2	3.0	4.0	7.40 - 7.75	1550	61.0	13DJ3602	13DH3602	13DU3602	47.0	103.4	68.0	149.6	0.273	9.64
BM 30-3	4.0	5.5	9.45 - 9.45	1650	65.0	13DJ3603	13DH3603	13DU3603	54.0	118.8	78.0	171.6	0.289	10.21
BM 30-4	5.5	7.5	12.8 - 12.8	1850	72.8	13DJ3604	13DH3604	13DU3604	64.0	140.8	92.0	202.4	0.320	11.30
BM 30-5	7.5	10.0	17.0 - 17.4	1850	72.8	13DJ3605	13DH3605	13DU3605	78.0	171.6	111.0	244.2	0.320	11.30
BM 30-7	9.2	12.5	21.0 - 21.8	2100	82.7	13DJ3607	13DH3607	13DU3607	91.0	200.2	129.0	283.8	0.356	12.57
BM 30-8	11.0	15.0	24.0 - 25.5	2200	86.6	13DJ3608	13DH3608	13DU3608	96.0	211.2	136.0	299.2	0.374	13.21
BM 30-10	13.0	17.5	28.5 - 29.5	2500	98.4	13DJ3610	13DH3610	13DU3610	108.0	237.6	153.0	336.6	0.421	14.87
BM 30-11	15.0	20.0	32.5 - 33.5	2500	98.4	13DJ3611	13DH3611	13DU3611	113.0	248.6	160.0	352.0	0.421	14.87
BM 30-14	18.5	25.0	41.0 - 42.0	2850	112.2	13DJ3614	13DH3614	13DU3614	129.0	283.8	183.0	402.6	0.476	16.81
BM 30-17	22.0	30.0	46.5 - 48.0	3200	126.0	13DJ3617	13DH3617	13DU3617	145.0	319.0	205.0	451.0	0.530	18.72
BM 30-20	26.0	35.0	54.4 - 57.5	3800	149.6	13DJ3620	13DH3620	13DU3620	165.0	363.0	233.0	512.6	0.624	22.01
BM 30-23	30.0	40.0	63.0 - 66.5	4250	167.3	13DJ3623	13DH3623	13DU3623	185.0	407.0	261.0	574.2	0.694	24.51
BM 46-2	5.5	7.5	12.8 - 12.8	1650	65.0	15EO3602	15E13602	15E63602	59.0	129.8	85.0	187.0	0.289	10.21
BM 46-3	7.5	10.0	17.0 - 17.4	1750	68.9	15EO3603	15E13603	15E63603	75.0	165.0	107.0	235.4	0.304	10.74
BM 46-4	9.2	12.5	21.0 - 21.8	1850	72.8	15EO3604	15E13604	15E63604	85.0	87.0	121.0	266.2	0.320	11.30
BM 46-5	13.0	17.5	28.5 - 29.5	2100	82.7	15EO3605	15E13605	15E63605	98.0	215.6	139.0	305.8	0.356	12.57
BM 46-6	15.0	20.0	32.5 - 33.5	2200	86.6	15EO3606	15E13606	15E63606	105.0	231.0	149.0	237.8	0.374	13.21
BM 46-8	18.5	25.0	41.0 - 42.0	2500	98.4	15EO3608	15E13608	15E63608	121.0	266.2	171.0	376.2	0.421	14.87
BM 46-9	22.0	30.0	46.5 - 48.0	2700	106.3	15EO3609	15E13609	15E63609	132.0	290.4	187.0	411.4	0.452	15.96
BM 46-11	26.0	35.0	54.5 - 57.5	3050	120.0	15EO3611	15E13611	15E63611	148.0	325.6	209.0	459.8	0.507	17.90
BM 46-13	30.0	40.0	63.0 - 66.5	3200	126.0	14DE3613	15E13613	15E63613	163.0	358.6	230.0	506.0	0.530	18.72
BM 60-5	15.0	20.0	32.5 - 33.5	2100	82.7	14DE3605	14DJ3605	14E63605	102.0	224.4	145.0	319.0	0.356	12.57
BM 60-6	18.5	25.0	41.0 - 33.0	2200	86.6	14DE3606	14DJ3606	14E63606	111.0	244.2	157.0	345.4	0.374	13.21
BM 60-8	22.0	30.0	46.5 - 48.0	2500	98.4	14DE3608	14DJ3608	14E63608	127.0	279.4	180.0	396.0	0.421	14.87
BM 60-9	26.0	35.0	54.5 - 57.5	2700	106.3	14DE3609	14DJ3609	14E63609	138.0	303.6	195.0	429.0	0.452	15.96
BM 60-10	30.0	40.0	63.0 - 66.5	2850	112.2	14DE3610	14DJ3610	14E63610	150.0	330.0	212.0	466.4	0.476	16.81

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Dimensional sketch



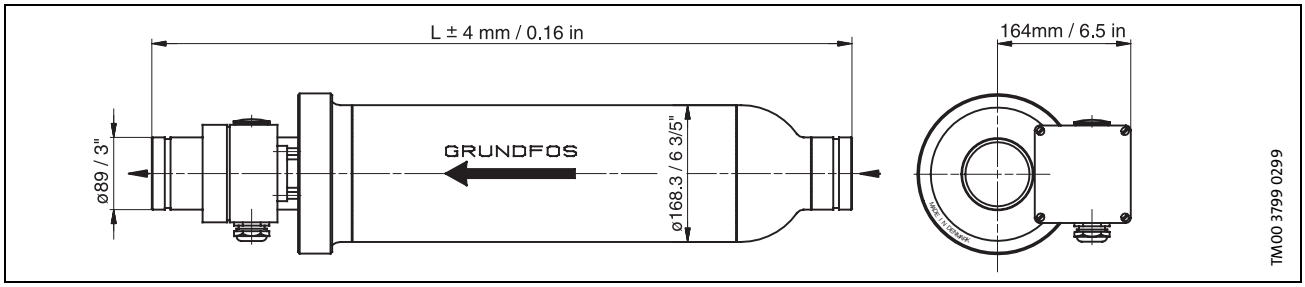
One set of connecting fittings is required for each system (please see "Accessories").

Booster module 6", 3 x 575 V, 60 Hz, (with straight pipe connections)

Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Product no. R-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]				Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 17-3	3.0	5.0	6.9	1550	61.0	12DJ3903	12DH3903	call factory	48.0	105.6	69.0	151.8	0.273	9.64
BM 17-4	4.0	7.5	10.6	1550	61.0	12DJ3904	12DH3904	call factory	53.0	116.6	76.0	167.2	0.273	9.64
BM 17-6	5.5	7.5	10.6	1850	72.8	12DJ3906	12DH3906	call factory	63.0	138.6	90.0	198	0.320	11.30
BM 17-8	7.5	10.0	13.6	1850	72.8	12DJ3908	12DH3908	call factory	79.0	173.8	113.0	248.6	0.320	11.30
BM 17-10	11.0	15.0	19.6	2100	82.7	12DJ3910	12DH3910	call factory	91.0	200.2	129.0	283.8	0.356	12.57
BM 17-12	11.0	15.0	19.6	2200	86.6	12DJ3912	12DH3912	call factory	97.0	213.4	138.0	303.6	0.374	13.21
BM 17-15	15.0	20.0	26.4	2500	98.4	12DJ3915	12DH3915	call factory	109.0	239.8	155.0	341.0	0.421	14.87
BM 17-17	15.0	20.0	26.4	2500	98.4	12DH3917	12DH3917	call factory	115.0	253.0	163.0	358.6	0.421	14.87
BM 17-21	18.5	25.0	33.0	2850	112.2	12DH3921	12DH3921	call factory	131.0	288.2	185.0	407.0	0.476	16.81
BM 17-25	22.0	30.0	37.0	3200	126.0	12DH3925	12DH3925	call factory	147.0	323.4	208.0	457.6	0.530	18.72
BM 17-30	30.0	40.0	51.0	3800	149.6	12DH3930	12DH3930	call factory	167.0	367.4	236.0	519.2	0.624	22.04
BM 30-2	3.0	5.0	6.9	1550	61.0	13DJ3602	13DH3902	call factory	47.0	103.4	68.0	149.6	0.273	9.64
BM 30-3	4.0	7.5	10.6	1650	65.0	13DJ3603	13DH3903	call factory	54.0	118.8	78.0	171.6	0.289	10.21
BM 30-4	5.5	7.5	10.6	1850	72.8	13DJ3604	13DH3904	call factory	64.0	140.8	92.0	202.4	0.320	11.30
BM 30-5	7.5	10.0	13.6	1850	72.8	13DJ3605	13DH3905	call factory	78.0	171.6	111.0	244.2	0.320	11.30
BM 30-7	11.0	15.0	19.6	2100	82.7	13DJ3607	13DH3907	call factory	91.0	200.2	129.0	283.8	0.356	12.57
BM 30-8	11.0	15.0	19.6	2200	86.6	13DJ3608	13DH3908	call factory	96.0	211.2	136.0	299.2	0.374	13.21
BM 30-10	15.0	20.0	26.4	2500	98.4	13DJ3610	13DH3910	call factory	108.0	237.6	153.0	336.6	0.421	14.87
BM 30-11	15.0	20.0	26.4	2500	98.4	13DJ3611	13DH3911	call factory	113.0	248.6	160.0	352.0	0.421	14.87
BM 30-14	18.5	25.0	33.0	2850	112.2	13DJ3614	13DH3914	call factory	129.0	283.8	183.0	402.6	0.476	16.81
BM 30-17	22.0	30.0	37.0	3200	126.0	13DJ3617	13DH3917	call factory	145.0	319.0	205.0	451.0	0.530	18.72
BM 30-20	30.0	40.0	51.0	3800	149.6	13DJ3620	13DH3920	call factory	165.0	363.0	233.0	512.6	0.624	22.01
BM 30-23	30.0	40.0	51.0	4250	167.3	13DJ3623	13DH3923	call factory	185.0	407.0	261.0	574.2	0.694	24.51
BM 46-2	5.5	7.5	10.6	1650	65.0	15DJ3902	15D93902	call factory	59.0	129.8	85.0	187.0	0.289	10.21
BM 46-3	7.5	10.0	13.6	1750	68.9	15DJ3903	15D93903	call factory	75.0	165.0	107.0	235.4	0.304	10.74
BM 46-4	11.0	15.0	19.6	1850	72.8	15DJ3904	15D93904	call factory	85.0	87.0	121.0	266.2	0.320	11.30
BM 46-5	15.0	20.0	26.4	2100	82.7	15DJ3905	15D93905	call factory	98.0	215.6	139.0	305.8	0.356	12.57
BM 46-6	15.0	20.0	26.4	2200	86.6	15DJ3906	15D93906	call factory	105.0	231.0	149.0	237.8	0.374	13.21
BM 46-8	18.5	25.0	33.0	2500	98.4	15DJ3908	15D93908	call factory	121.0	266.2	171.0	376.2	0.421	14.87
BM 46-9	22.0	30.0	37.0	2700	106.3	15DJ3909	15D93909	call factory	132.0	290.4	187.0	411.4	0.452	15.96
BM 46-11	30.0	40.0	51.0	3050	120.0	15DJ3911	15D93911	call factory	148.0	325.6	209.0	459.8	0.507	17.90
BM 46-13	30.0	40.0	51.0	3200	126.0	15DJ3913	15D93913	call factory	163.0	358.6	230.0	506.0	0.530	18.72
BM 60-5	15.0	20.0	26.4	2100	82.7	14DE3905	14DJ3905	call factory	102.0	224.4	145.0	319.0	0.356	12.57
BM 60-6	18.5	25.0	33.0	2200	86.6	14DE3906	14DJ3906	call factory	111.0	244.2	157.0	345.4	0.374	13.21
BM 60-8	22.0	30.0	37.0	2500	98.4	14DE3908	14DJ3908	call factory	127.0	279.4	180.0	396.0	0.421	14.87
BM 60-9	30.0	40.0	51.0	2700	106.3	14DE3909	14DJ3909	call factory	138.0	303.6	195.0	429.0	0.452	15.96
BM 60-10	30.0	40.0	51.0	2850	112.2	14DE3910	14DJ3910	call factory	150.0	330.0	212.0	466.4	0.476	16.81

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Dimensional sketch



One set of connecting fittings is required for each system (please see "Accessories").

Booster module 8", 3 x 440 - 480 V, 60 Hz, (with straight pipe connections)

Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]			Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 30-27 *	37.0	50.0	75.0	4450	175.2	13DK3627	13DW3627	337	741.4	479	1053.8	1.65	58.27
BM 46-16 *	37.0	50.0	75.0	3800	149.6	15DK3616	15DW3616	299	657.8	415	913.0	1.42	50.15
BM 46-19 *	45.0	60.0	89.0	4150	163.4	15DK3619	15DW3619	318	699.6	448	485.6	1.54	54.39
BM 60-13 *	37.0	50.0	75.0	3450	135.8	14DK3613	14DW3613	287	631.4	389	855.8	1.29	45.91
BM 60-14 *	45.0	60.0	89.0	3450	135.8	14DK3614	14DW3614	291	640.2	393	864.6	1.29	45.91
BM 60-15 *	45.0	60.0	89.0	3800	149.6	14DK3615	14DW3615	301	662.2	417	917.4	1.42	50.15
BM 60-16 *	55.0	75.0	110.0	3800	149.6	14DK3616	14DW3616	337	741.4	453	996.6	1.42	50.15
BM 60-18 *	55.0	75.0	110.0	4150	163.4	14DK3618	14DW3618	348	765.6	478	1051.6	1.54	54.39
BM 77-4	22.0	30.0	42.0-47.0	2400	94.5	16DE3604	16DJ3604	185	407.0	245	539.0	0.91	32.14
BM 77-5	30.0	40.0	65.0-67.0	2750	108.3	16DE3605	16DJ3605	204	448.8	278	611.6	1.04	36.73
BM 77-6 *	37.0	50.0	75.0	2750	108.3	16DK3606	16DW3606	273	600.6	347	763.4	1.04	36.73
BM 77-7 *	45.0	60.0	89.0	3200	126.0	16DK3607	16DW3607	288	633.6	380	836.0	1.20	42.38
BM 77-10 *	55.0	75.0	110.0	3450	135.8	16DK3610	16DW3610	372	818.4	474	1042.8	1.29	45.57
BM 77-13 *	75.0	100.0	144.0	4150	163.4	16DK3613	16DW3613	398	875.6	528	1161.6	1.54	54.39
BM 95-4	26.0	35.0	56.0-58.0	2400	94.5	19893604	19903604	190	418.0	250	550.0	0.91	32.14
BM 95-5 *	37.0	50.0	75.0	2750	108.3	19913605	19923604	273	600.6	347	763.4	1.04	36.73
BM 95-7 *	45.0	60.0	89.0	3200	126.0	19913607	19923607	315	693.0	407	895.4	1.20	42.38
BM 95-8 *	55.0	75.0	89.0	3450	126.0	19913608	19923608	354	778.8	446	981.2	1.20	42.38
BM 95-11 *	75.0	100.0	144.0	3800	149.6	19913611	19923611	457	1005.4	573	1260.6	1.42	50.15
BM 95-13 *	93.0	125.0	189.0	4450	175.2	19913613	19923613	477	1049.4	619	1361.8	1.65	58.27
BM 125-2	30.0	40.0	65.0-67.0	2400	94.5	17DR3602	17DT3602	286	629.2	346	761.2	0.91	32.14
BM 125-3-2 *	37.0	50.0	75.0	2400	94.5	17DU36B3	17DW36B3	286	629.2	346	761.2	0.91	32.14
BM 125-3 *	45.0	50.0	89.0	2750	108.3	17DU3603	17DW3603	312	686.4	386	849.2	1.04	36.73
BM 125-4-1 *	55.0	75.0	89.0	2750	108.3	17DU36A4	17DW36A4	320	704.0	394	866.8	1.04	36.73
BM 125-5-1 *	75.0	100.0	144.0	3200	126.0	17DU36A5	17DW36A5	368	809.6	460	1012.0	1.20	42.38
BM 125-6-1 *	93.0	125.0	189.0	3800	149.6	17DU36A6	17DW36A6	461	1014.2	577	1269.4	1.42	50.15

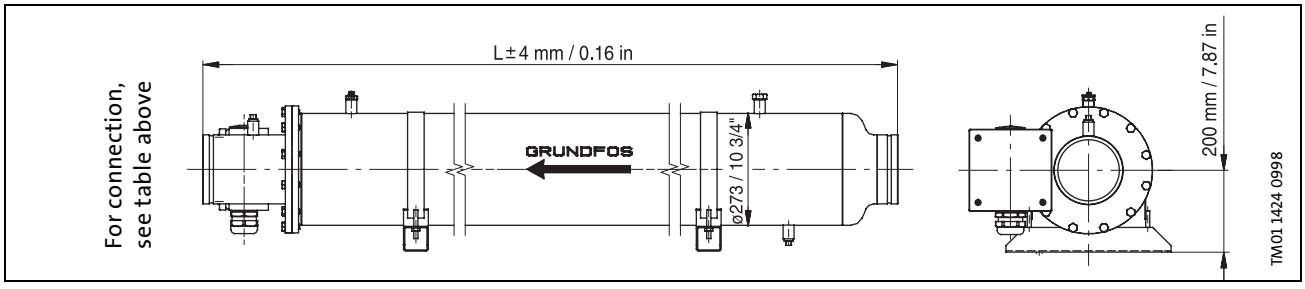
On request the BM is available in other voltages and with all stages indicated in the standard SP product range.

*Full load current I_{SF} apply to 3 x 460V.

Connections

Size	BM type	Victaulic coupling Style 77
BM 8"	BM 30 - BM 46	3" / ø89 mm
BM 8"	BM 60	4" / ø114 mm
BM 8"	BM 77 - BM 95	5" / ø139 mm
BM 8"	BM 125	6"/ ø168 mm

Dimensional sketch



One set of connecting fittings is required for each system (please see "Accessories").

Order data

Booster module 8", 3 x 575 V, 60 Hz, (with straight pipe connections)

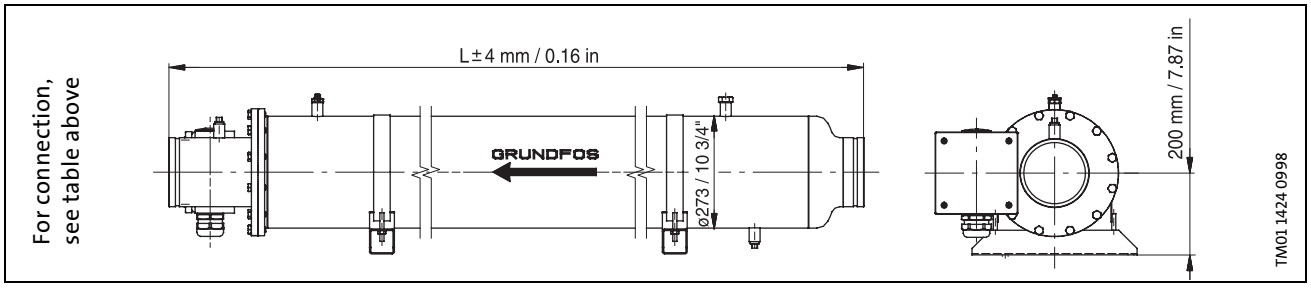
Type	Motor output [P_2]		Full load current I_{SF} [A]	Length [L]		Product no. N-version	Product no. NE-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]			Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 30-27 *	37.0	50.0	59.0	4450	175.2	13DK3927	13DW3927	337	741.4	479	1053.8	1.65	58.27
BM 46-16 *	37.0	50.0	59.0	3800	149.6	15DK3916	15DW3916	299	657.8	415	913.0	1.42	50.15
BM 46-19 *	45.0	60.0	69.0	4150	163.4	15DK3919	15DW3919	318	699.6	448	485.6	1.54	54.39
BM 60-13 *	37.0	50.0	59.0	3450	135.8	14DK3913	14DW3913	287	631.4	389	855.8	1.29	45.91
BM 60-14 *	45.0	60.0	69.0	3450	135.8	14DK3914	14DW3914	291	640.2	393	864.6	1.29	45.91
BM 60-15 *	45.0	60.0	69.0	3800	149.6	14DK3915	14DW3915	301	662.2	417	917.4	1.42	50.15
BM 60-16 *	55.0	75.0	86.0	3800	149.6	14DK3916	14DW3916	337	741.4	453	996.6	1.42	50.15
BM 60-18 *	55.0	75.0	86.0	4150	163.4	14DK3918	14DW3918	348	765.6	478	1051.6	1.54	54.39
BM 77-4	22.0	30.0	37.0	2400	94.5	16DE3904	16D73904	185	407.0	245	539.0	0.91	32.14
BM 77-5	30.0	40.0	51.0	2750	108.3	16DE3905	16D73905	204	448.8	278	611.6	1.04	36.73
BM 77-6 *	37.0	50.0	59.0	2750	108.3	16DE3906	16D73906	273	600.6	347	763.4	1.04	36.73
BM 77-7 *	45.0	60.0	69.0	3200	126.0	16DE3907	16D73907	288	633.6	380	836.0	1.20	42.38
BM 77-10 *	55.0	75.0	86.0	3450	135.8	16DE3910	16D73910	372	818.4	474	1042.8	1.29	45.57
BM 77-13 *	75.0	100.0	114.0	4150	163.4	16DE3913	16D73913	398	875.6	528	1161.6	1.54	54.39
BM 95-4	30.0	40.0	51.0	2400	94.5	19893904	19903904	190	418.0	250	550.0	0.91	32.14
BM 95-5 *	37.0	50.0	59.0	2750	108.3	19913905	19923905	273	600.6	347	763.4	1.04	36.73
BM 95-7 *	45.0	60.0	69.0	3200	126.0	19913907	19923907	315	693.0	407	895.4	1.20	42.38
BM 95-8 *	55.0	75.0	86.0	3450	126.0	19913908	19923908	354	778.8	446	981.2	1.20	42.38
BM 95-11 *	75.0	100.0	114.0	3800	149.6	19913911	19923911	457	1005.4	573	1260.6	1.42	50.15
BM 95-13 *	93.0	125.0	151.0	4450	175.2	19913913	19923913	477	1049.4	619	1361.8	1.65	58.27
BM 125-2	30.0	40.0	51.0	2400	94.5	17DR3902	17DT3902	286	629.2	346	761.2	0.91	32.14
BM 125-3-2 *	37.0	50.0	59.0	2400	94.5	17DU39B3	17DW39B3	286	629.2	346	761.2	0.91	32.14
BM 125-3 *	45.0	50.0	59.0	2750	108.3	17DU3903	17DW3903	312	686.4	386	849.2	1.04	36.73
BM 125-4-1 *	55.0	75.0	86.0	2750	108.3	17DU39A4	17DW39A4	320	704.0	394	866.8	1.04	36.73
BM 125-5-1 *	75.0	100.0	114.0	3200	126.0	17DU39A5	17DW39A5	368	809.6	460	1012.0	1.20	42.38
BM 125-6-1 *	93.0	125.0	151.0	3800	149.6	17DU39A6	17DW39A6	461	1014.2	577	1269.4	1.42	50.15

On request the BM is available in other voltages and with all stages indicated in the standard SP product range.

Connections

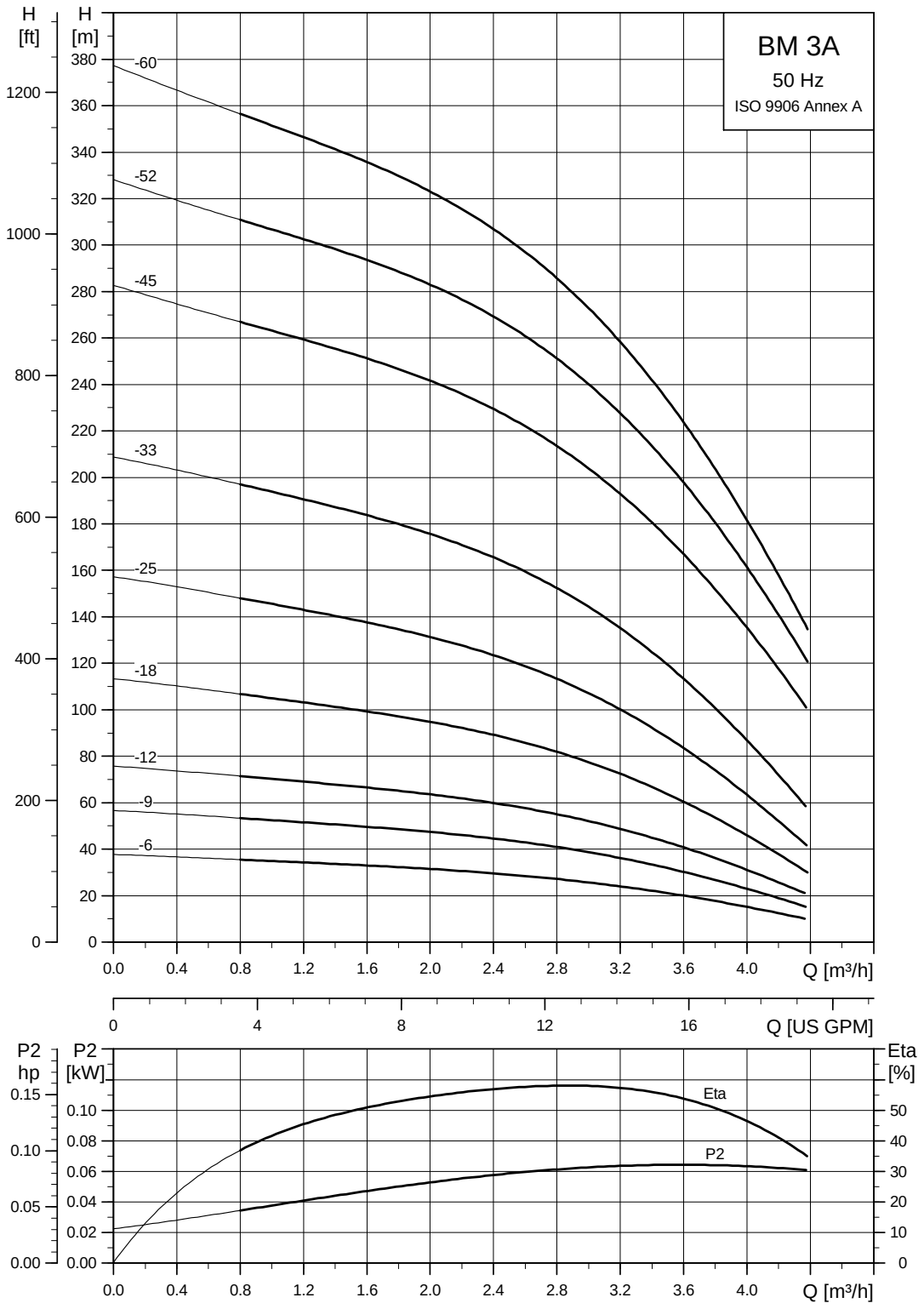
Size	BM type	Victaulic coupling Style 77
BM 8"	BM 30 - BM 46	3" / ø89 mm
BM 8"	BM 60	4" / ø114 mm
BM 8"	BM 77 - BM 95	5" / ø139 mm
BM 8"	BM 125	6"/ ø168 mm

Dimensional sketch

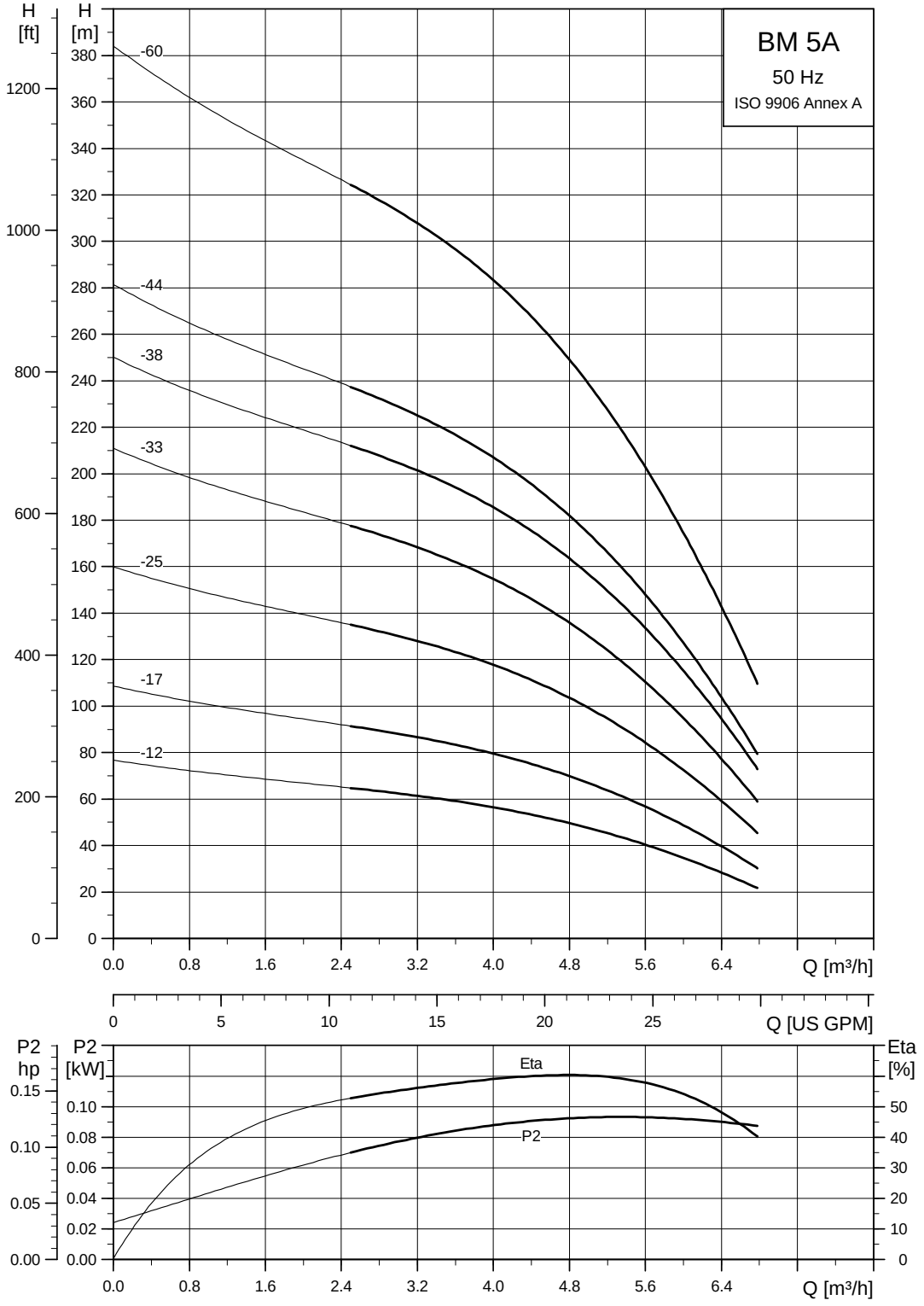


One set of connecting fittings is required for each system (please see "Accessories").

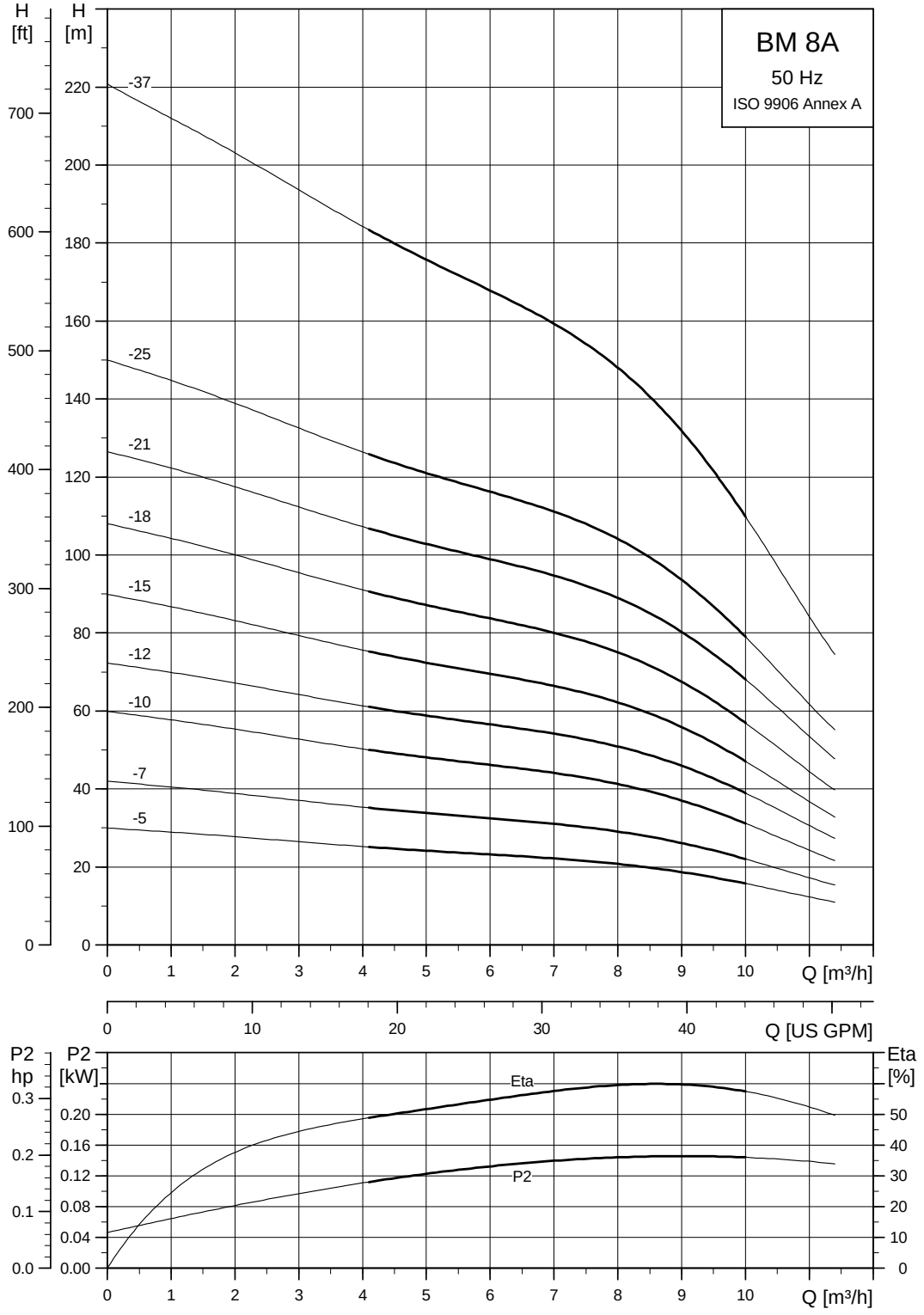
Performance curves



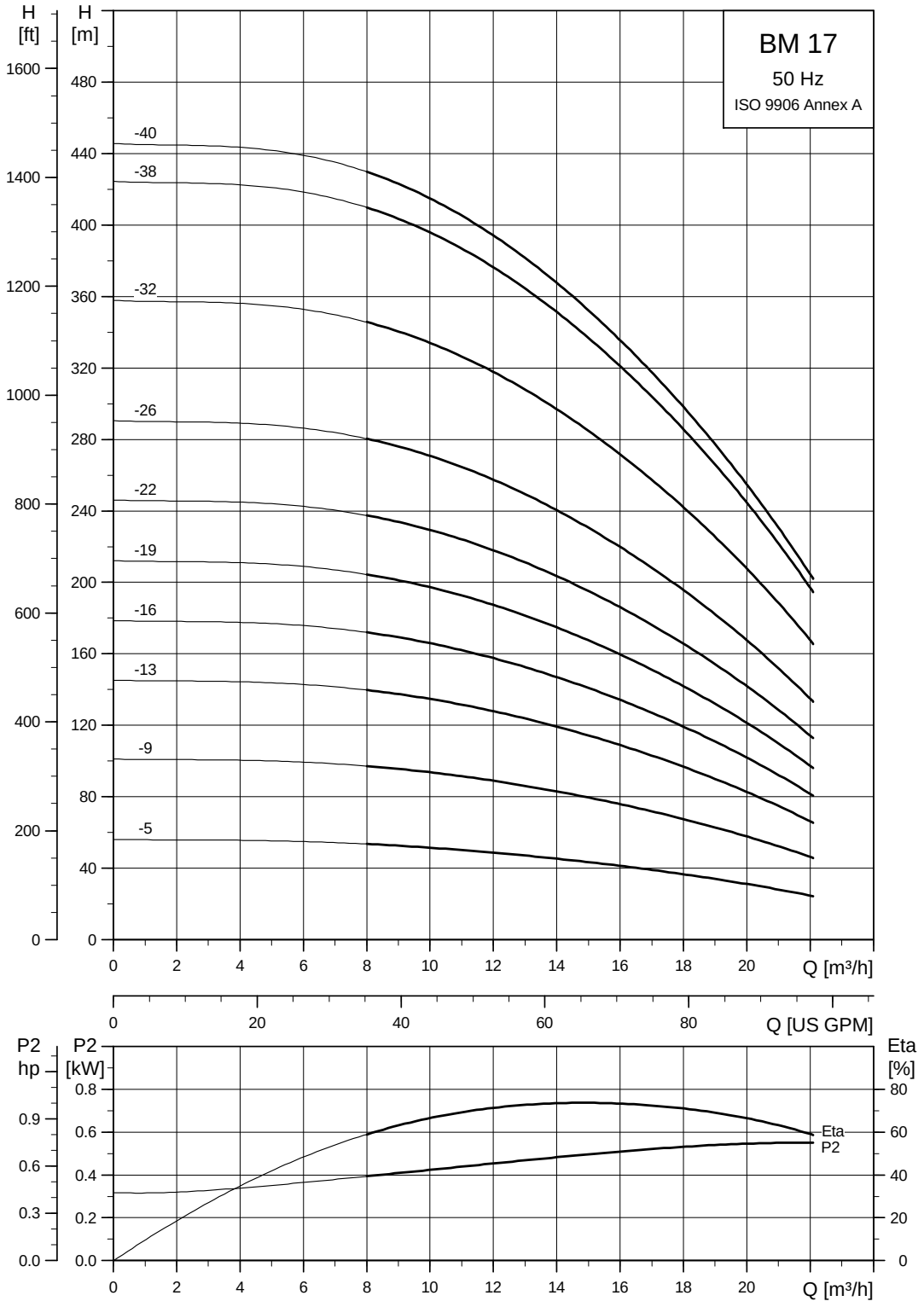
Performance curves



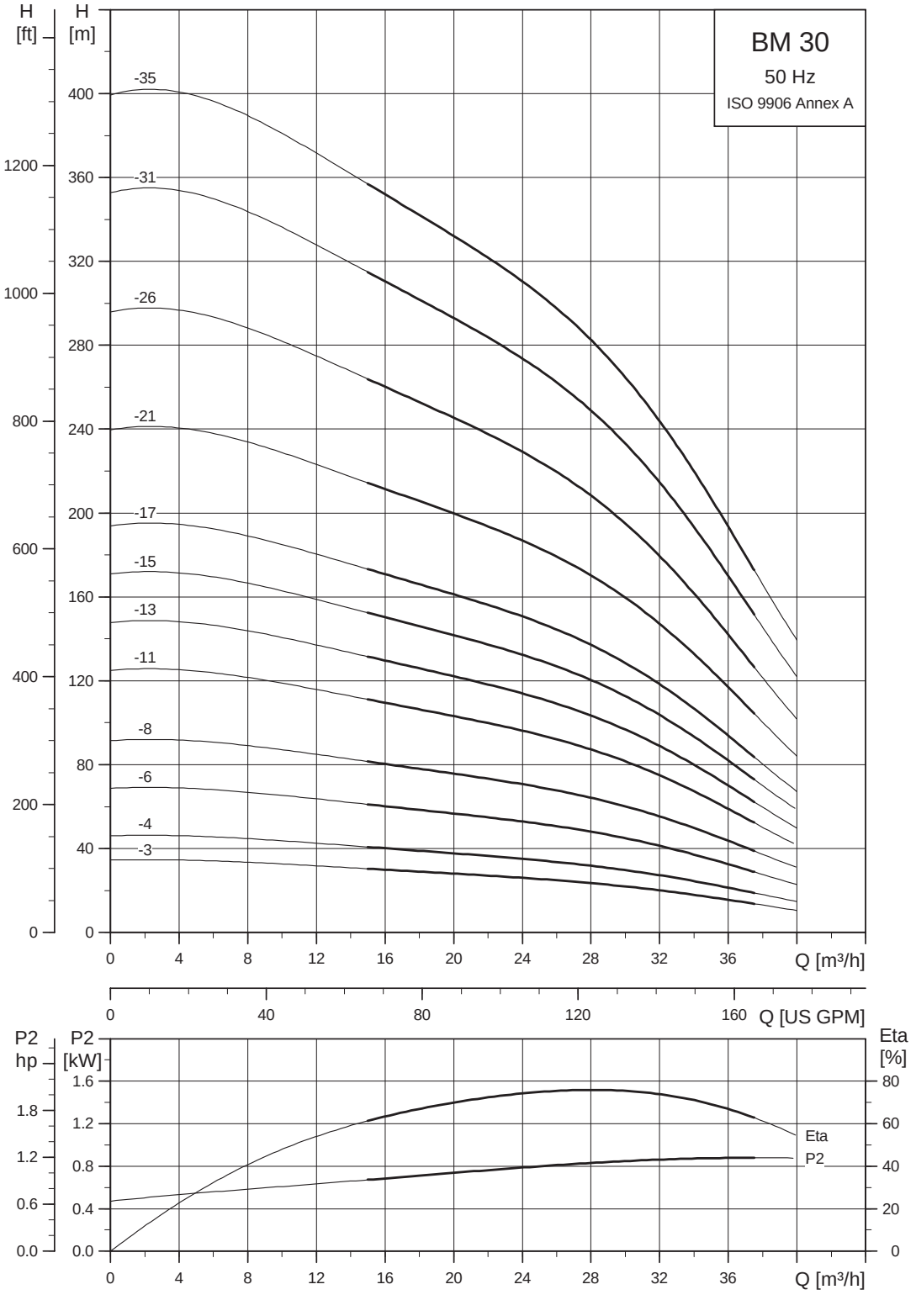
Performance curves



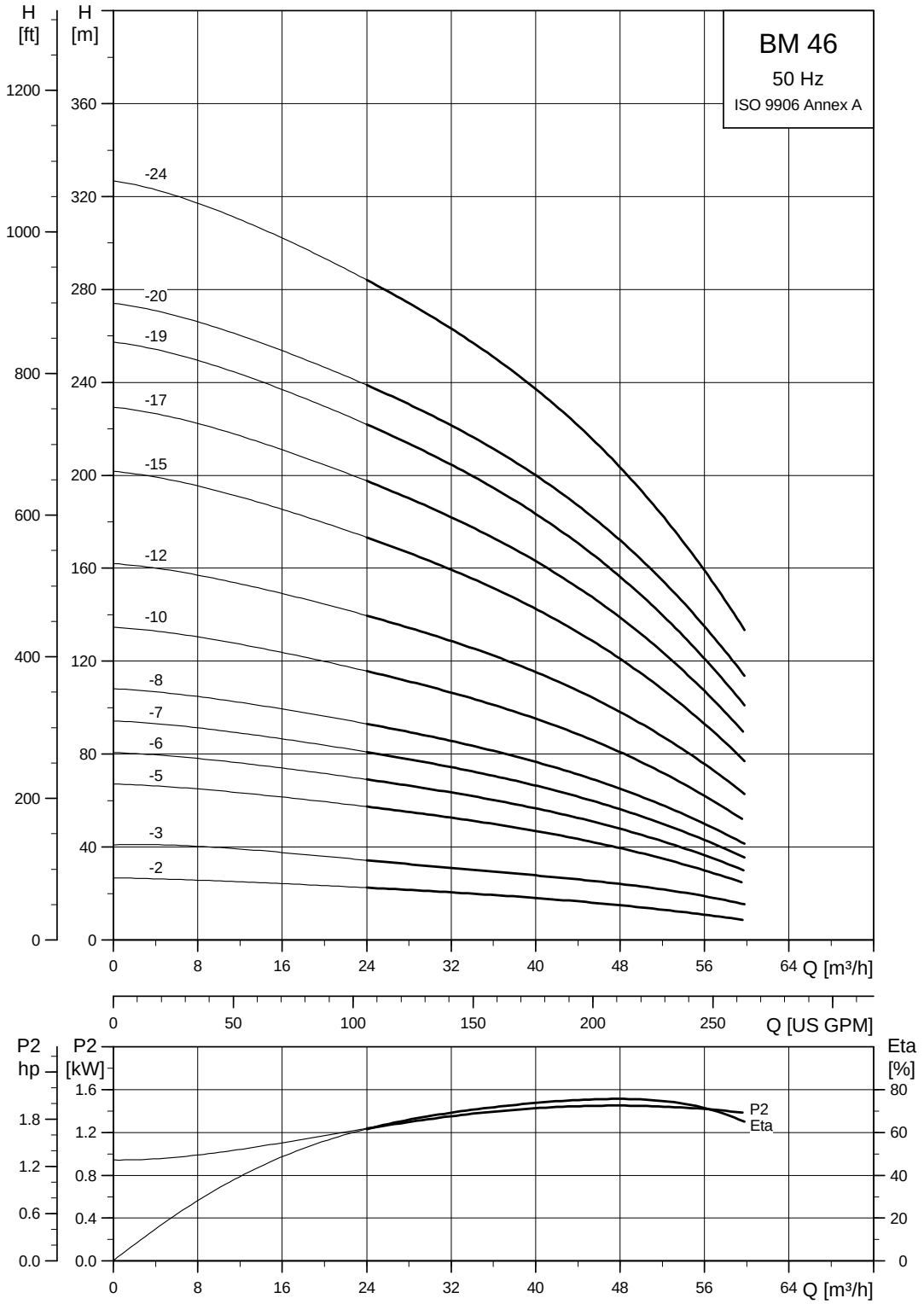
Performance curves



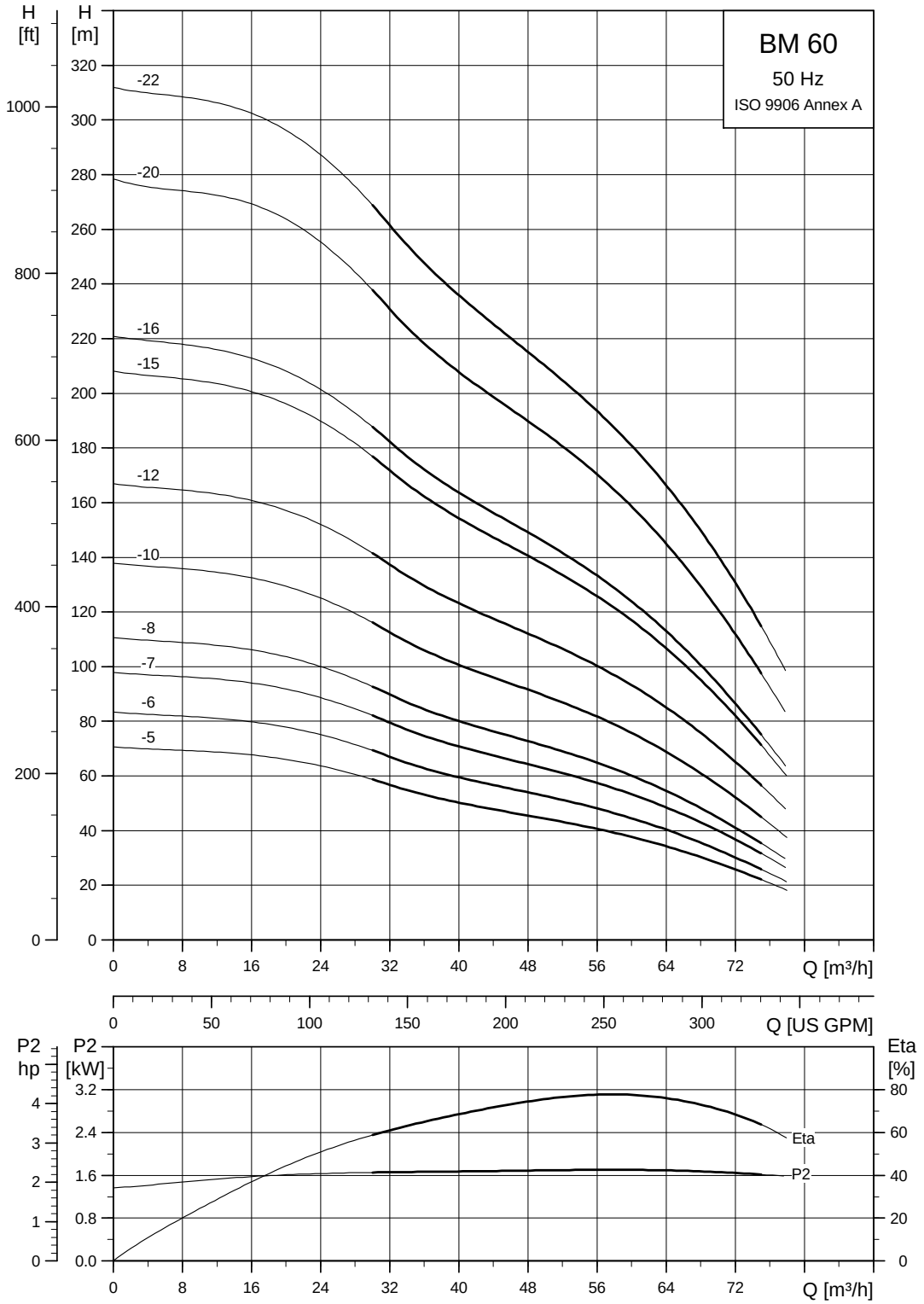
Performance curves



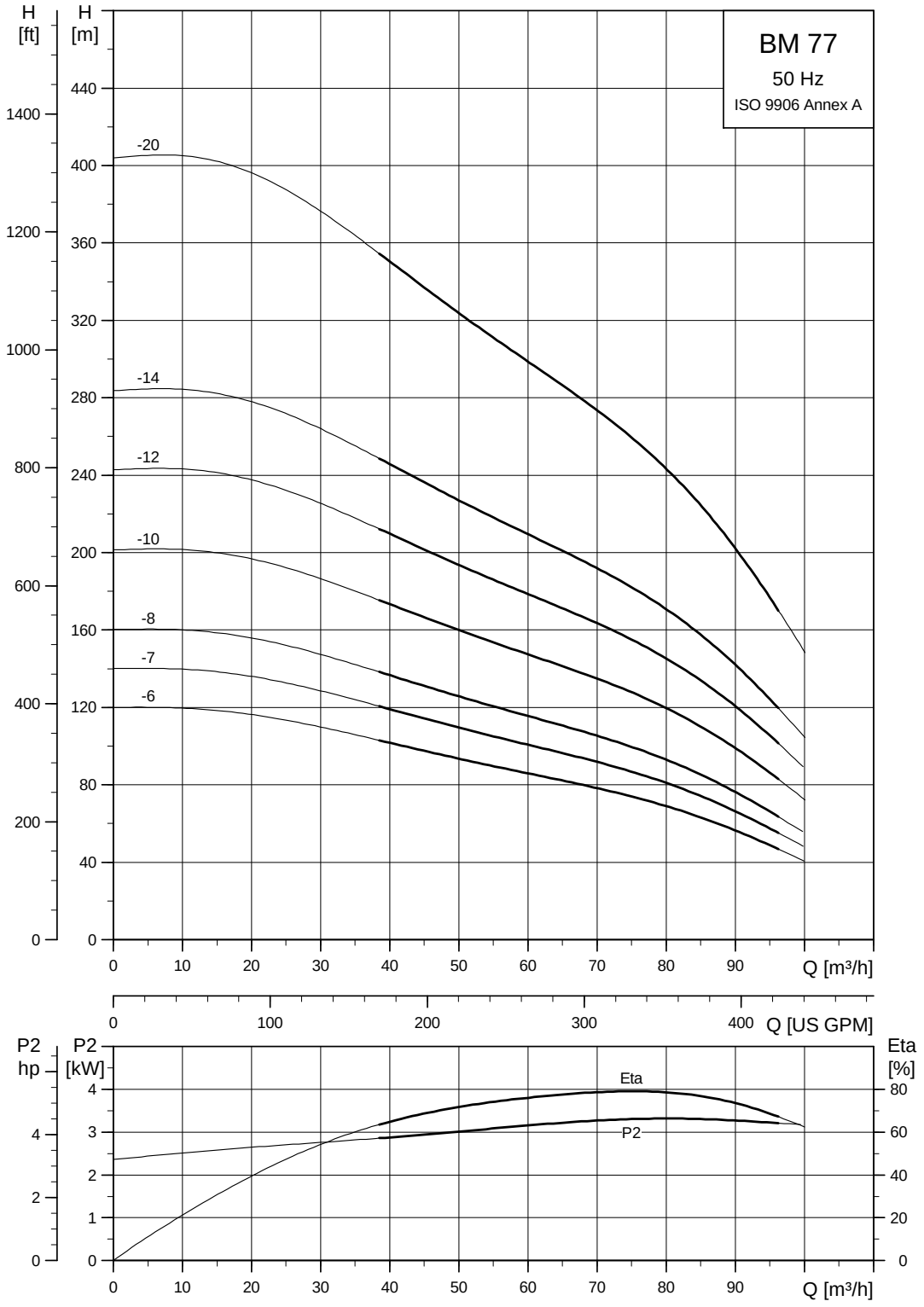
Performance curves



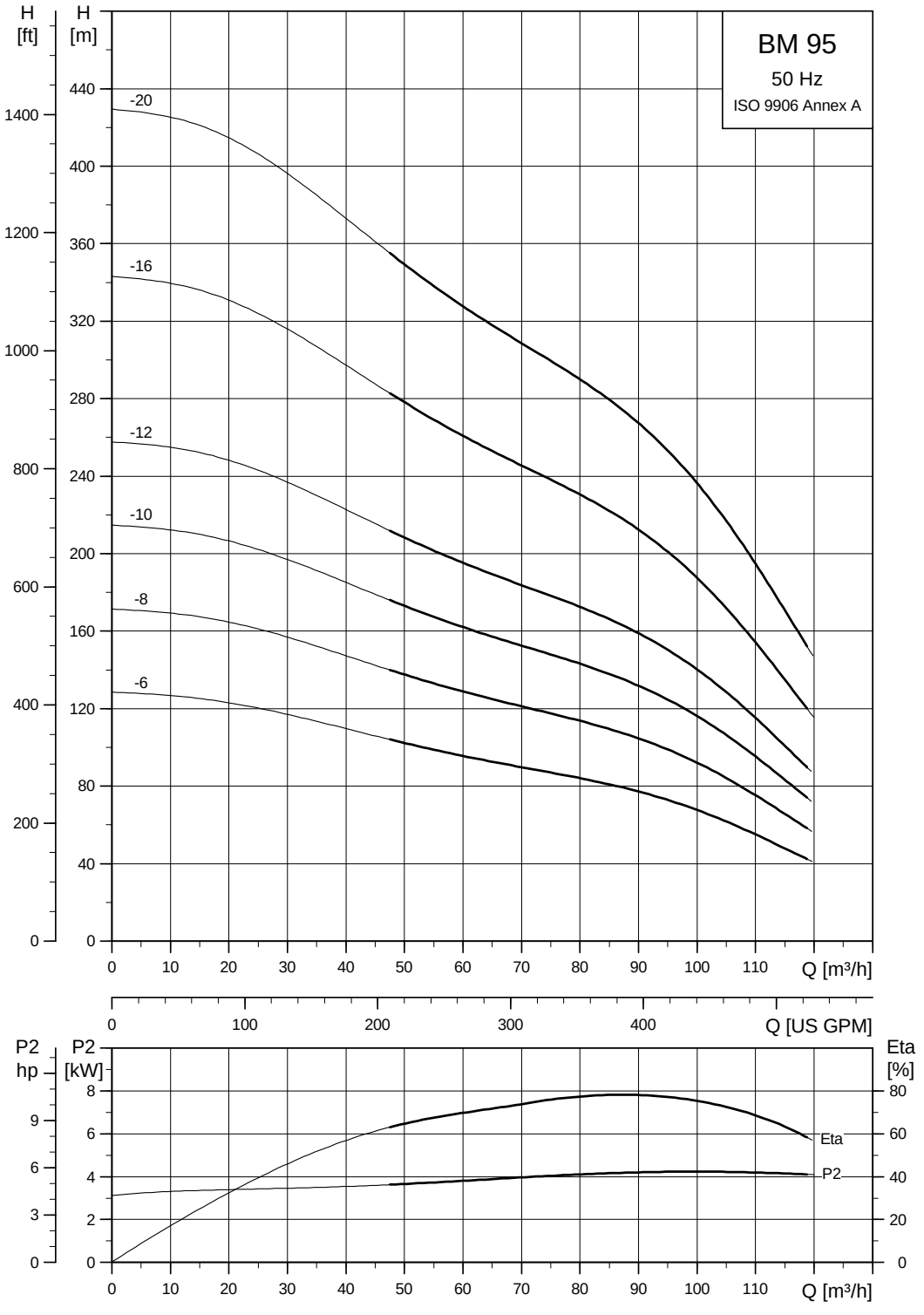
Performance curves



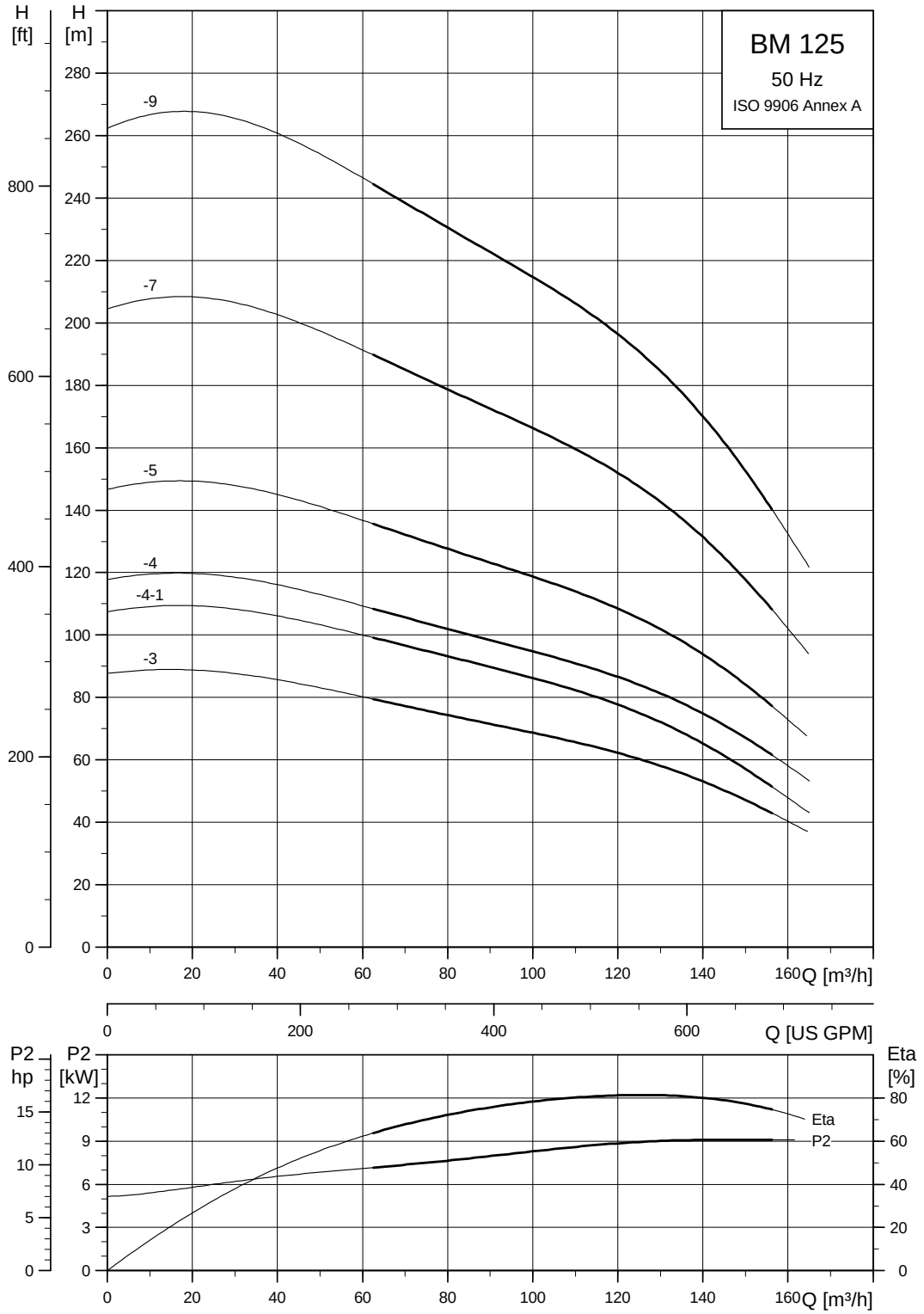
Performance curves



Performance curves



Performance curves



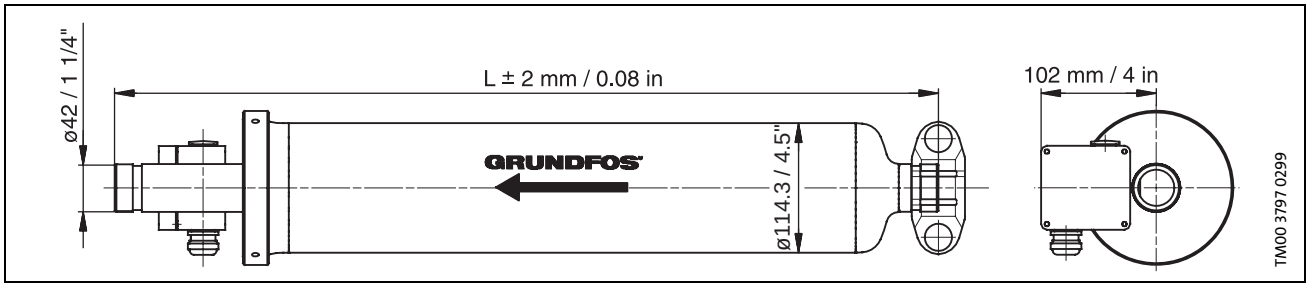
Order data

Booster module 4", 3 x 380 - 415 V, 50 Hz, (with straight pipe connections)

Type	Motor output [P_2]		Nominal current I_N [A]	Length [L]		Product no. N-version	Product no. NE-version	Product no. R-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]				Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 3A- 6	0.75	1.0	1.92-1.84	1222	45.0	10731906	10741906	-	31.0	68.2	37.0	81.4	0.095	3.35
BM 3A- 9	0.75	1.0	1.92-1.84	1222	45.0	10731909	10741909	-	32.0	70.4	38.0	83.6	0.095	3.35
BM 3A-12	0.75	1.0	1.92-1.84	1222	45.0	10731912	10741912	-	33.0	72.6	39.0	85.8	0.095	3.35
BM 3A-18	1.1	1.5	2.80-2.75	1369	50.8	10731918	10741918	-	37.0	81.4	43.0	94.6	0.100	3.53
BM 3A-25	1.5	2.0	3.95-4.10	1640	61.5	10731925	10741925	-	41.0	90.2	47.0	103.4	0.120	4.24
BM 3A-33	2.2	3.0	5.85-6.45	1758	66.1	10731933	10741933	-	46.0	101.2	52.0	114.4	0.126	4.44
BM 3A-45	3.0	4.0	8.35-8.10	1986	75.1	10731945	10741945	-	53.0	116.6	59.0	129.8	0.142	5.01
BM 3A-52	4.0	5.5	9.75-9.80	2346	89.3	10731952	10741952	-	62.0	136.4	69.0	151.8	0.170	6.00
BM 3A-60	4.0	5.5	9.75-9.80	2490	95.0	10731960	10741960	-	65.0	143	72.0	158.4	0.175	6.18
BM 5A-12	1.1	1.5	2.80-2.75	1222	45.0	05731912	05741912	05771912	34.0	74.8	40.0	88.0	0.095	3.35
BM 5A-17	1.5	2.0	3.95-4.10	1369	50.8	05731917	05741917	05771917	36.0	79.2	42.0	92.4	0.100	3.53
BM 5A-25	2.2	3.0	5.85-6.45	1640	61.5	05731925	05741925	05771925	43.0	94.6	49.0	107.8	0.120	4.24
BM 5A-33	3.0	4.0	8.35-8.10	1986	75.1	05731933	05741933	05771933	49.0	107.8	55.0	121.0	0.142	5.01
BM 5A-38	4.0	5.5	9.75-9.80	1986	75.1	05731938	05741938	05771938	54.0	118.8	60.0	132.0	0.142	5.01
BM 5A-44	4.0	5.5	9.75-9.80	2112	80.1	05731944	05741944	05771944	57.0	125.4	64.0	140.8	0.149	5.26
BM 5A-60	5.5	7.5	13.0-13.4	2490	98.0	05731960	05741960	05771960	70.0	154	77.0	169.4	0.175	6.18
BM 8A- 5	0.75	1.0	1.92-1.84	1222	45.0	11731905	11741905	11771905	32.0	70.4	38.0	83.6	0.095	3.35
BM 8A- 7	1.1	1.5	2.80-2.75	1369	50.8	11731907	11741907	11771907	35.0	77.0	41.0	90.2	0.100	3.53
BM 8A-10	1.5	2.0	3.95-4.10	1472	54.9	11731910	11741910	11771910	37.0	81.4	43.0	94.6	0.106	3.74
BM 8A-12	2.2	3.0	5.85-6.45	1640	61.5	11731912	11741912	11771912	41.0	90.2	47.0	103.4	0.120	4.24
BM 8A-15	2.2	3.0	5.85-6.45	1758	66.1	11731915	11741915	11771915	44.0	96.8	50.0	110.0	0.126	4.44
BM 8A-18	3.0	4.0	8.35-8.10	1986	75.1	11731918	11741918	11771918	48.0	105.6	54.0	118.8	0.142	5.01
BM 8A-21	4.0	5.5	9.75-9.80	2112	80.1	11731921	11741921	11771921	54.0	118.8	61.0	134.2	0.149	5.26
BM 8A-25	4.0	5.5	9.75-9.80	2346	89.3	11731925	11741925	11771925	57.0	125.4	64.0	140.8	0.170	6.00
BM 8A-37	5.5	7.5	13.0-13.4	2737	107.8	11731937	11741937	11771937	73.0	160.6	81.0	178.2	0.192	6.78

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Dimensional sketch



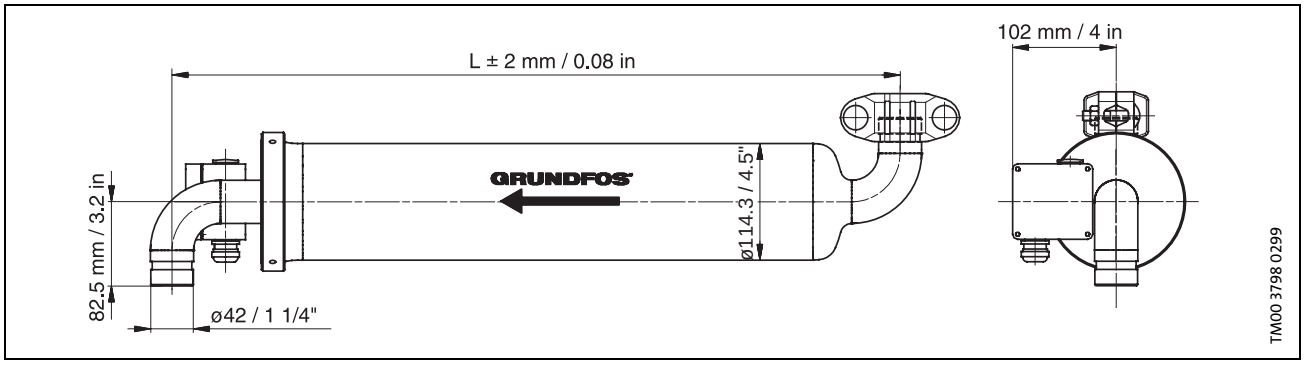
One set of connecting fittings is required for each system (see "Accessories").

Booster module 4", 3 x 380 - 415 V, 50 Hz, (with elbow)

Type	Motor output [P_2]		Nominal current I_N [A]	Length [L]		Product no. N-version	Product no. NE-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]			Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 3A- 6	0.75	1.0	1.92-1.84	1144	45.0	10751906	10761906	31.0	68.2	37.0	81.4	0.095	3.35
BM 3A- 9	0.75	1.0	1.92-1.84	1144	45.0	10751909	10761909	32.0	70.4	38.0	83.6	0.095	3.35
BM 3A-12	0.75	1.0	1.92-1.84	1144	45.0	10751912	10761912	33.0	72.6	39.0	85.8	0.095	3.35
BM 3A-18	1.1	1.5	2.80-2.75	1291	50.8	10751918	10761918	37.0	81.4	43.0	94.6	0.100	3.53
BM 3A-25	1.5	2.0	3.95-4.10	1562	61.5	10751925	10761925	41.0	90.2	47.0	103.4	0.120	4.24
BM 3A-33	2.2	3.0	5.85-6.45	1680	66.1	10751933	10761933	46.0	101.2	52.0	114.4	0.126	4.44
BM 3A-45	3.0	4.0	8.35-8.10	1908	75.1	10751945	10761945	53.0	116.6	59.0	129.8	0.142	5.01
BM 3A-52	4.0	5.5	9.75-9.80	2268	89.3	10751952	10761952	62.0	136.4	69.0	151.8	0.170	6.00
BM 3A-60	4.0	5.5	9.75-9.80	2412	95.0	10751960	10761960	65.0	143.0	72.0	158.4	0.175	6.18
BM 5A-12	1.1	1.5	2.80-2.75	1144	45.0	05751912	05761912	34.0	74.8	40.0	88.0	0.095	3.35
BM 5A-17	1.5	2.0	3.95-4.10	1291	50.8	05751917	05761917	36.0	79.2	42.0	92.4	0.100	3.53
BM 5A-25	2.2	3.0	5.85-6.45	1562	61.5	05751925	05761925	43.0	94.6	49.0	107.8	0.120	4.24
BM 5A-33	3.0	4.0	8.35-8.10	1908	75.1	05751933	05761933	49.0	107.8	55.0	121.0	0.142	5.01
BM 5A-38	4.0	5.5	9.75-9.80	1908	75.1	05751938	05761938	54.0	118.8	60.0	132.0	0.142	5.01
BM 5A-44	4.0	5.5	9.75-9.80	2034	80.1	05751944	05761944	57.0	125.4	64.0	140.8	0.149	5.26
BM 5A-60	5.5	7.5	13.0-13.4	2412	95.0	05751960	05761960	70.0	154.0	77.0	169.4	0.175	6.18
BM 8A- 5	0.75	1.0	1.92-1.84	1144	45.0	11751905	11761905	32.0	70.4	38.0	83.6	0.095	3.35
BM 8A- 7	1.1	1.5	2.80-2.75	1291	50.8	11751907	11761907	35.0	77.0	41.0	90.2	0.100	3.53
BM 8A-10	1.5	2.0	3.95-4.10	1394	54.9	11751910	11761910	37.0	81.4	43.0	94.6	0.106	3.74
BM 8A-12	2.2	3.0	5.85-6.45	1562	61.5	11751912	11761912	41.0	90.2	47.0	103.4	0.120	4.24
BM 8A-15	2.2	3.0	5.85-6.45	1680	66.1	11751915	11761915	44.0	96.8	50.0	110.0	0.126	4.44
BM 8A-18	30	4.0	8.35-8.10	1908	75.1	11751918	11761918	48.0	105.6	54.0	118.8	0.142	5.01
BM 8A-21	4.0	5.5	9.75-9.80	2034	80.1	11751921	11761921	54.0	118.8	61.0	134.2	0.149	5.26
BM 8A-25	4.0	5.5	9.75-9.80	2268	89.3	11751925	11761925	57.0	125.4	64.0	140.8	0.170	5.00
BM 8A-37	5.5	7.5	13.0-13.4	2707	106.6	11751937	11761937	73.0	160.6	81.0	178.2	0.192	6.78

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Dimensional sketch



One set of connecting fittings is required for each system (please see "Accessories").

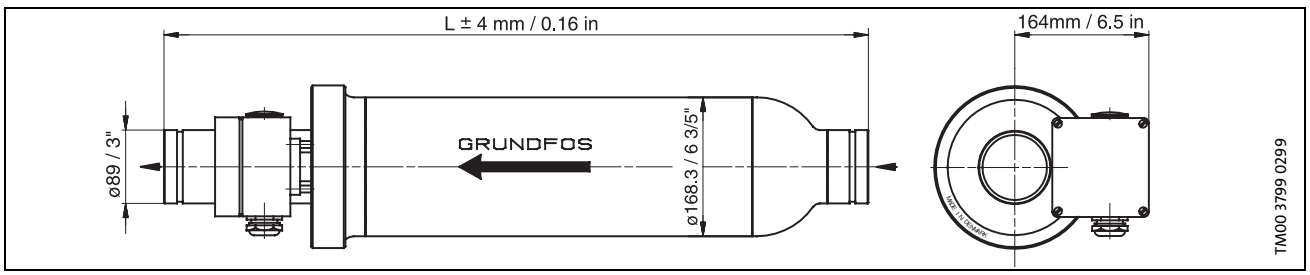
Order data

Booster module 6", 3 x 380 - 415 V, 50 Hz, (with straight pipe connections)

Type	Motor output [P_2]		Nominal current I_N [A]	Length [L]		Product no. N-version	Product no. NE-version	Product no. R-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]				Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 17- 5	3.0	4.0	8.10-8.35	1550	61.0	12CE1905	12CF1905	12CU1905	49	107.8	71	156.2	0.273	9.64
BM 17- 7	4.0	5.5	9.75-9.80	1750	68.9	12CE1907	12CF1907	12CU1907	59	129.8	85	187.0	0.304	10.74
BM 17- 9	5.5	7.5	13.0-13.4	1950	76.8	12CE1909	12CF1909	12CU1909	69	151.8	99	217.8	0.335	11.83
BM 17- 13	7.5	10.0	17.6-17.8	2200	86.6	12CE1913	12CF1913	12CU1913	90	19.8	128	281.6	0.340	12.00
BM 17- 16	9.2	12.5	21.8-21.8	2500	98.4	12CE1916	12CF1916	12CU1916	104	228.8	148	325.6	0.421	14.87
BM 17- 19	11.0	15.0	25.5-25-8	2700	106.3	12CE1919	12CF1919	12CU1919	114	250.8	162	356.4	0.452	15.96
BM 17- 22	13.0	17.5	30.5-31.0	2850	112.2	12CE1922	12CF1922	12CU1922	122	268.4	173	380.6	0.476	16.81
BM 17- 26	15.0	20.0	34.0-34.5	3050	120.1	12CE1926	12CF1926	12CU1926	134	294.8	190	418.0	0.507	17.90
BM 17- 32	18.5	25.0	42.0-42.5	3800	149.6	12CE1932	12CF1932	12CU1932	158	347.6	223	490.6	0.624	22.04
BM 17- 38	22.0	30.0	47.5-50.0	4250	167.3	12CE1938	12CF1938	12CU1938	178	391.6	251	552.2	0.694	24.51
BM 17- 40	22.0	30.0	47.5-50.0	4250	167.3	12CE1940	12CF1940	12CU1940	181	398.2	255	561.0	0.694	24.51
BM 30- 3	3.0	4.0	8.10-8.35	1550	61.0	13CE1903	13CF1903	12CU1903	48	105.6	69	151.9	0.273	9.64
BM 30- 4	4.0	5.5	9.75-9.80	1750	68.9	13CE1904	13CF1904	12CU1904	56	123.2	80	176.0	0.304	10.74
BM 30- 6	5.5	7.5	13.0-13.4	2100	82.7	13CE1906	13CF1906	12CU1906	67	147.4	96	211.2	0.335	11.83
BM 30- 8	7.5	10.0	17.6-17.8	2100	82.7	13CE1908	13CF1908	12CU1908	87	191.4	124	272.8	0.356	12.57
BM 30- 11	9.2	12.5	21.8-21.8	2500	98.4	13CE1911	13CF1911	12CU1911	103	226.6	146	321.2	0.421	14.87
BM 30- 13	11.0	15.0	25.5-25-8	2700	106.3	13CE1913	13CF1913	13CU1913	113	248.6	160	352.0	0.452	15.96
BM 30- 15	13.0	17.5	30.5-31.0	2850	112.2	13CE1915	13CF1915	13CU1915	121	266.2	171	376.2	0.476	16.81
BM 30- 17	15.0	20.0	34.0-34.5	3200	126.0	13CE1917	13CF1917	13CU1917	131	288.2	185	407.0	0.530	18.72
BM 30- 21	18.5	25.0	42.0-42.5	3800	149.6	13CE1921	13CF1921	13CU1921	155	341.0	219	481.8	0.624	22.04
BM 30- 26	22.0	30.0	47.5-50.0	4250	167.3	13CE1926	13CF1926	13CU1926	176	387.2	248	545.6	0.694	24.51
BM 30- 31	26.0	35.0	57.0-59.0	4950	194.9	13CE1931	13CF1931	13CU1931	195	429.0	275	605.0	0.713	25.18
BM 30- 35	30.0	40.0	66.5-68.5	5100	200.8	13CE1935	13CF1935	13CU1935	216	475.2	304	668.8	0.735	25.96
BM 46- 2	3.0	4.0	8.10-8.35	1550	61.0	15C81902	15C91902	15C71902	46	101.2	66	145.2	0.273	9.64
BM 46- 3	5.5	7.5	13.0-13.4	1750	68.9	15C81903	15C91903	15C71903	63	138.6	90	198.0	0.304	10.74
BM 46- 5	7.5	10.0	17.6-17.8	1950	76.8	15C81905	15C91905	15C71905	82	180.4	117	257.4	0.335	11.83
BM 46- 6	9.2	12.5	21.8-21.8	2100	82.7	15C81906	15C91906	15C71906	94	206.8	134	294.8	0.356	11.83
BM 46- 7	11.0	15.0	25.5-25.8	2200	86.6	15C81907	15C91907	15C71907	101	222.2	143	314.6	0.374	13.21
BM 46- 8	13.0	17.5	30.5-31.0	2500	98.4	15C81908	15C91908	15C71908	108	237.6	153	336.6	0.421	14.87
BM 46- 10	15.0	20.0	34.0-34.5	2700	106.3	15C81910	15C91910	15C71910	123	270.6	174	382.8	0.452	15.96
BM 46- 12	18.5	25.0	42.0-42.5	3050	120.1	15C81912	15C91912	15C71912	136	299.2	192	422.4	0.507	17.90
BM 46- 15	22.0	30.0	47.5-50.0	3400	133.9	15C81915	15C91915	15C71915	157	345.4	222	488.4	0.562	19.85
BM 46- 17	26.0	35.0	57.0-59.0	3800	149.6	15C81917	15C91917	15C71917	174	382.8	246	541.2	0.624	22.04
BM 46- 19	30.0	40.0	66.5-68.5	4250	167.3	15C81919	15C91919	15C71919	187	411.4	264	580.8	0.694	24.51
BM 60- 5	9.2	12.5	21.8-21.8	1950	76.8	14CE1905	14CF1905	14C71905	89	195.8	127	279.4	0.335	11.83
BM 60- 6	11.0	15.0	25.5-25.8	2100	82.7	14CE1906	14CF1906	14C71906	98	215.6	139	305.8	0.356	12.57
BM 60- 7	13.0	17.5	30.5-31.0	2200	86.6	14CE1907	14CF1907	14C71907	104	228.8	148	325.6	0.390	13.77
BM 60- 8	15.0	20.0	34.0-34.5	2500	98.4	14CE1908	14CF1908	14C71908	116	255.6	164	360.8	0.421	14.87
BM 60- 10	18.5	25.0	42.0-42.5	2700	106.3	14CE1910	14CF1910	14C71910	129	283.8	183	402.6	0.452	15.96
BM 60- 12	22.0	30.0	47.5-50.0	3050	120.1	14CE1912	14CF1912	14C71912	145	319.0	205	671.0	0.507	17.90
BM 60- 15	26.0	35.0	57.0-59.0	3400	133.9	14CE1915	14CF1915	14C71915	163	358.6	230	506.0	0.562	19.85
BM 60- 16	30.0	40.0	66.5-68.5	3800	149.6	14CE1916	14CF1916	14C71916	180	396.0	254	558.8	0.624	22.04

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Dimensional sketch



One set of connecting fittings is required for each system (please see "Accessories").

Booster module 8", 3 x 380 - 415 V, 50 Hz, (with straight pipe connections)

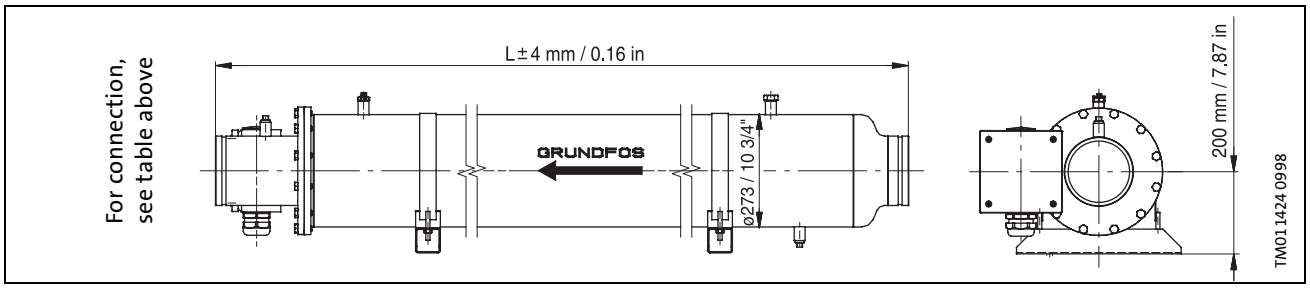
Type	Motor output [P_2]		Nominal current I_N [A]	Length [L]		Product no. N-version	Product no. NE-version	Weight				Shipping vol.	
	[kW]	[hp]		[mm]	[in]			Net [kg]	Net [lb]	Gross [kg]	Gross [lb]	m³	ft³
BM 46- 20	37.0	50.0	74.0-77.0	4150	175.2	15CR1920	15CT1920	329	723.8	471	1036.2	1.65	58.27
BM 46- 24	37.0	50.0	74.0-77.0	4950	194.9	15CR1924	15CT1924	347	763.4	509	1119.8	1.83	64.63
BM 60- 20	37.0	50.0	74.0-77.0	4150	163.4	14CR1920	14CT1920	323	710.6	453	996.6	1.54	54.39
BM 60- 22	45.0	60.0	90.0-92.0	4450	175.2	14CR1922	14CT1922	332	730.4	474	1042.8	1.65	58.27
BM 77-6	22.0	30.0	47.5-50.0	2750	108.3	16CE1906	16CF1906	194	426.8	268	589.6	1.04	36.73
BM 77-7	26.0	35.0	57.0-59.0	2750	108.3	16CE1907	16CF1907	204	448.8	278	611.6	1.04	36.73
BM 77-8	30.0	40.0	66.5-68.5	3200	126.0	16CE1908	16CF1908	225	495.0	317	697.4	1.20	42.34
BM 77-10	37.0	50.0	74.0-77.0	3450	135.8	16CR1910	16CT1910	307	675.4	409	899.8	1.29	45.56
BM 77-12	45.0	60.0	90.0-92.0	3800	149.6	16CR1912	16CT1912	320	704.0	436	959.2	1.42	51.15
BM 77-14	55.0	75.0	109.0-111.0	4150	163.4	16CR1914	16CT1914	367	807.4	497	1093.4	1.54	54.39
BM 77-20	75.0	100.0	142.0-147.0	4950	194.9	16CR1920	16CT1920	442	972.4	604	1328.8	1.83	64.63
BM 95-6	26.0	35.0	57.0-59.0	2750	108.3	19581906	19591906	204	448.8	278	611.6	1.04	36.73
BM 95-8	37.0	50.0	74.0-77.0	3200	126.0	19651908	19661908	287	631.4	379	833.8	1.20	42.34
BM 95-10	45.0	60.0	90.0-92.0	3450	135.8	19651910	19661910	299	657.8	401	882.2	1.29	45.46
BM 95-12	55.0	75.0	109.0-111.0	3800	149.6	19651912	19661912	345	759.0	461	1014.2	1.42	51.15
BM 95-16	75.0	100.0	142.0-147.0	4450	175.2	19651916	19661916	407	895.4	549	1207.8	1.65	58.27
BM 95-20	93.0	125.0	187.0-188.0	5300	208.7	19651920	19661920	519	1141.8	695	1529.0	1.96	69.22
BM 125-3	30.0	40.0	66.5-68.5	2400	94.5	17CE1903	17CF1903	202	444.4	262	576.4	0.91	32.14
BM 125-4-1	37.0	50.0	74.0-77.0	2750	108.3	17CR19A4	17CT19A4	278	611.6	352	774.4	1.04	36.73
BM 125-4	45.0	60.0	90.0-92.0	2750	108.3	17CR1904	17CT1904	286	629.2	360	792.0	1.04	36.73
BM 125-5	55.0	75.0	109.0-111.0	3200	126.0	17CR1905	17CT1905	333	732.6	425	435.0	1.20	42.34
BM 125-7	75.0	100.0	142.0-147.0	3800	149.6	17CR1907	17CT1907	392	862.4	508	1117.6	1.42	51.15
BM 125-9	93.0	125.0	187.0-188.0	4150	163.4	17CR1909	17CT1909	496	1091.2	626	1377.2	1.54	51.15

Other voltages are available on request. All stages as indicated in the standard SP product range are available on request.

Connections

Size	BM type	Victaulic coupling Style 77
BM 8"	BM 30 - BM 46	3" / ø89 mm
BM 8"	BM 60	4" / ø114 mm
BM 8"	BM 77 - BM 95	5" / ø139 mm
BM 8"	BM 125	6"/ ø168 mm

Dimensional sketch



One set of connecting fittings is required for each system (please see "Accessories").

CU 3 Motor protection

The CU 3 control unit is an electronic motor starter for monitoring and protecting installations with rated voltages of 200 - 575 V, 50/60 Hz, and a maximum power consumption of 400 A.

The CU 3 monitors the following parameters:

System insulation resistance to earth before start.
Motor temperature.
Motor current consumption and current unbalance.
Voltage supply.
Phase sequence.

The CU 3 protects against:

Dry running (not for certain MS 402 motors).
Incipient motor defect.
Excessive motor temperature (not for certain MS 402 motors).
Motor burnout.

As standard, the CU 3 incorporates:

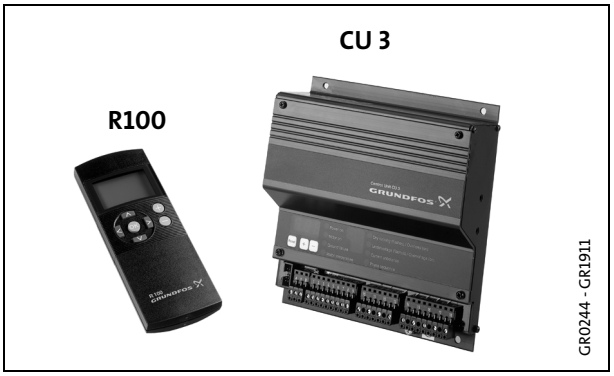
- Time relay for star-delta starting and autotransformer starting.
- Relay output for external fault indication.

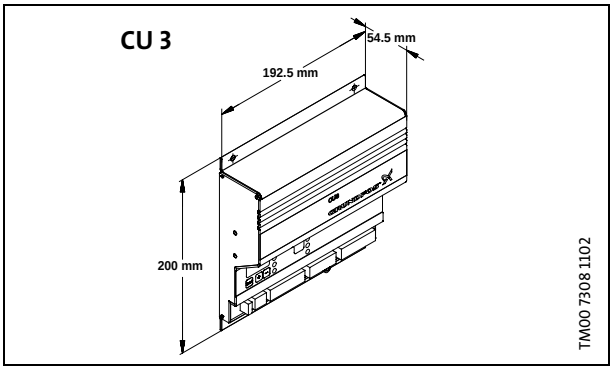
In addition CU 3 can be expanded to offer the following functions:

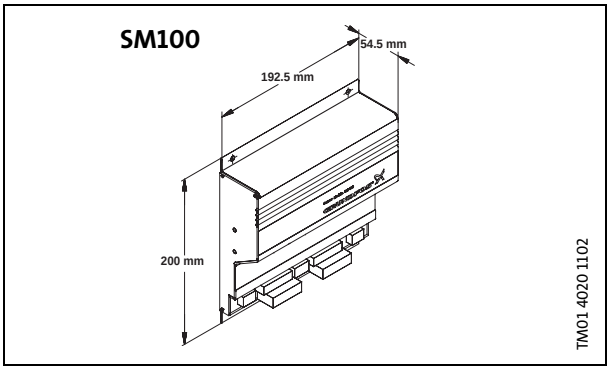
- **Remote control R100:** Wireless infra-red remote control by means of the R100. This function enables the user to change factory settings and to monitor the installation by calling up actual operating data, e.g. current consumption, supply voltage and operating hours.
- **External sensors SM100:** Reception of data from external sensors by means of an SM100 sensor module and control according to the data received, e.g. flow rate, pressure, water level and conductivity.
- **Communication module:** Monitoring and communication via a data BUS (GENIbus), a modem or radio, e.g. PC-based control/monitoring.

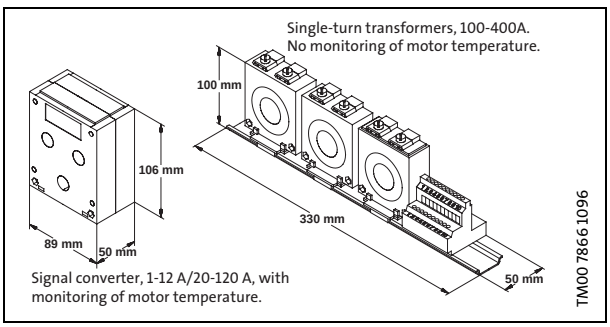
Technical data

Enclosure class:	IP 20.
Ambient temp.:	–20°C to +60°C (–4°F to +140°F).
Relative humidity:	99%.
Voltage variation:	–25/+15% of nominal voltage.
Frequency:	45 Hz to 65 Hz.
Max. back-up fuse:	10 A.
Relay output:	Max. 415 V, 3 A, AC 1.
Approvals:	The CU 3 complies with: VDE, DEMKO, EN, UL and CSA.
Marking:	CE.









Product numbers

CU 3 - 3 x 400 V			
Product number	Current range for signal converter [A]		
	1-12	10-120	100-400
62500293	●		
62500294		●	
62500295			●
CU 3 - 3 x 460 V			
62500247	●		
62500248		●	
62500249			●
CU 3 - 3 x 575 V			
62500253	●		
62500254		●	
62500255			●

CU 3 expansion possibilities		
Product	Range	Product number
Sensor module SM 100	3 x 400 [V]	00626191
	3 x 460 [V]	00626192
Communication module RS 485	-	00626159
DIN-Rail mounting		00626156
Remote control R100 HP printer for R100	- -	00625333 00620480
Signal converter	1 - 12 [A]	00620497
	10 - 120 [A]	00620498
	100 - 400 [A] ★	00626148

★ Single-turn transformersControl functions

Control Functions

This table describes the protection provided by CU 3.

Control parameters	Function	Problem	Advantages
Ground failure	Insulation resistance is measured only when the motor is not operating. A high-impedance voltage is applied to the motor leads and leakage to ground is measured. If the factory-set value is higher than the one measured, the motor cannot be started.	Damaged or decomposed insulation in • motor, • cable or cable joint.	• Possibility of indication of failure/of motor, cable and cable joint, • service indication.
Temperature	**MS 4000 and MS 6000.** The actual motor temperature is measured by means of the built-in Tempcon temperature transmitter and a signal is sent to CU 3 via the phase leads. CU 3 compared the measured temperature with the factory-set value.	• Overload, • frequent starts/stops, • operation against blocked discharge pipe, • insufficient flow velocity past the motor.	• Longer motor life, • safe operating conditions, • service indication.
Overvoltage/ undervoltage	If the factory-set values are exceeded, a fault indication is given. If the CU 3 receives a temperature signal, the voltage is no longer monitored, but the motor will continue to run. Therefore, the motor and consequently the pump operation will only be affected by voltage variations critical to the life of the motor. If there is **no** temperature signal, the motor will be stopped in case of overvoltage/undervoltage.	• The installation is close to a transformer, • the mains do not absorb load variations.	• Important installation parameter, • possibility of improving operating conditions.
Overload	The motor power input is measured on each of the three phases. The registered power input is an average of these three values. If the factory-set value is exceeded, the motor will stop.	• Incorrect dimensioning of pump/motor, • voltage supply failure, • defective cable, • blocking, • wear or corrosion.	• Longer motor life, • safe operating conditions, • service indication.
Dry running	The motor power input is measured on each of the three phases. The registered power input is an average of these three values. If the average value is lower than the factory-set value, the motor will stop.	Pump exposed to dry running or underload, for example caused by wear.	• Traditional dry-running protection is no longer necessary, • no extra cables.
Current unbalance	The motor power input is measured on each of the three phases.	• Mains load is uneven, • incipient motor defect, • phase voltages diverging.	• Motor protection against overload, • service indication.
Phase sequence	CU 3 and motor are installed so that the phase sequence corresponds to correct direction of rotation. CU 3 monitors changes in the phase sequences.	Two phases are wrongly connected.	Ensures correct pump performance.

MTP 75 motor protection

Long motor life

The MTP 75 protects against excessive motor temperature. This is the most simple and the most economical way of ensuring long motor life. The user is certain that operating conditions are observed and is given indication of the time when a service check should be made.

Excessive motor temperature may be caused by:

- Overload
- Frequent starting/stopping (hunting)
- Operation against closed valve/frozen discharge pipe
- Insufficient flow of liquid past the motor
- Pumping of water that is too hot
- Deposits on the motor
- Overvoltage
- Undervoltage
- Current unbalance
- Dry running (Note that the pump is not protected if the water level is below the pump inlet.)

Application and installation

The MTP 75 can be used only for motors with built-in temperature transmitter and should be installed for instance in a control cabinet.

The MTP 75 may be installed in any type of control cabinet containing a thermal relay with differential release and contactor. The thermal relay is necessary to protect against blocking or phase failure, since this will cause the temperature to rise much faster than the MTP 75 is able to register.

The MTP 75 is supplied with base for mounting on DIN rail.

Operation

The temperature transmitter will send a high-frequency signal indicating the motor temperature through the motor supply cable. The MTP 75 will stop the motor via the contactor if the temperature rises above 75°C (167°F). The temperature limit is factory-set and cannot be changed.

Display:

No light: Motor stopped. No supply voltage or electrical fault at temperature measuring.

Green light: Motor in operation and motor temperature OK, i.e. below 75°C (167°F).

Red light: Motor stopped and motor temperature too high, i.e. above 75°C (167°F).

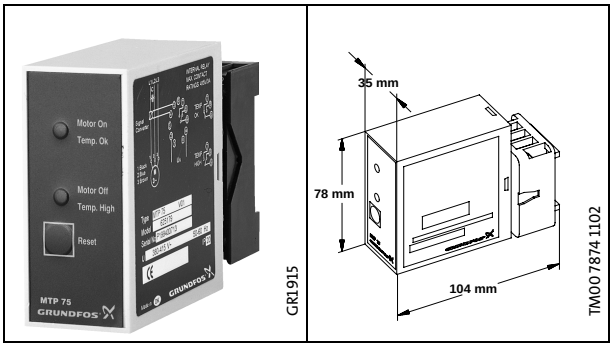
The MTP 75 is reset manually by pressing the reset button on the front cover or by switching off the voltage supply to the MTP 75.

No unnecessary downtime

Since the MTP 75 measures only the temperature and no other parameters causing a temperature rise, the motor and thus the pump will stop only when the motor temperature is too high.

Reliability

The MTP 75 is reliable due to its simple construction and because it requires no extra cables in the piping.



Technical data of MTP 75

Supply voltage:	2 variants: 1 x 200-240 V ±10%, 50/60 Hz. 3 x 380-415 V ±10%, 50/60 Hz. A transformer is required for voltages over 415 V.
Control voltage:	Contact load: Maximum 415 V/3 A. Minimum 12 V/20 mA.
Enclosure class:	IP 20.
Operating conditions:	Min. temperature: –20°C (–4°F). Max. temperature: +60°C (+140°F). Relative humidity: 99%.
Storage:	Min. temperature: –20°C (–4°F). Max. temperature: +60°C (+140°F) Relative humidity: 99%.
Approvals:	Complying with the regulations of VDE and DEMKO.

Product numbers

MTP 75 without plug-in base, capacitor and signal transformer:

Voltage range [V]	Product number
1 x 200-240	00625178
3 x 380-415	00625179

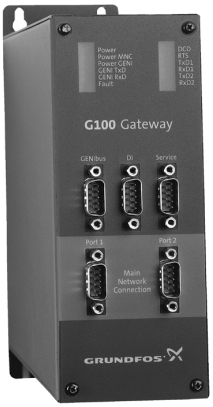
MTP 75 complete with plug-in base, capacitor and signal transformer:

Voltage range [V]	Product number
1 x 200-240	00625804
3 x 380-415	00625805

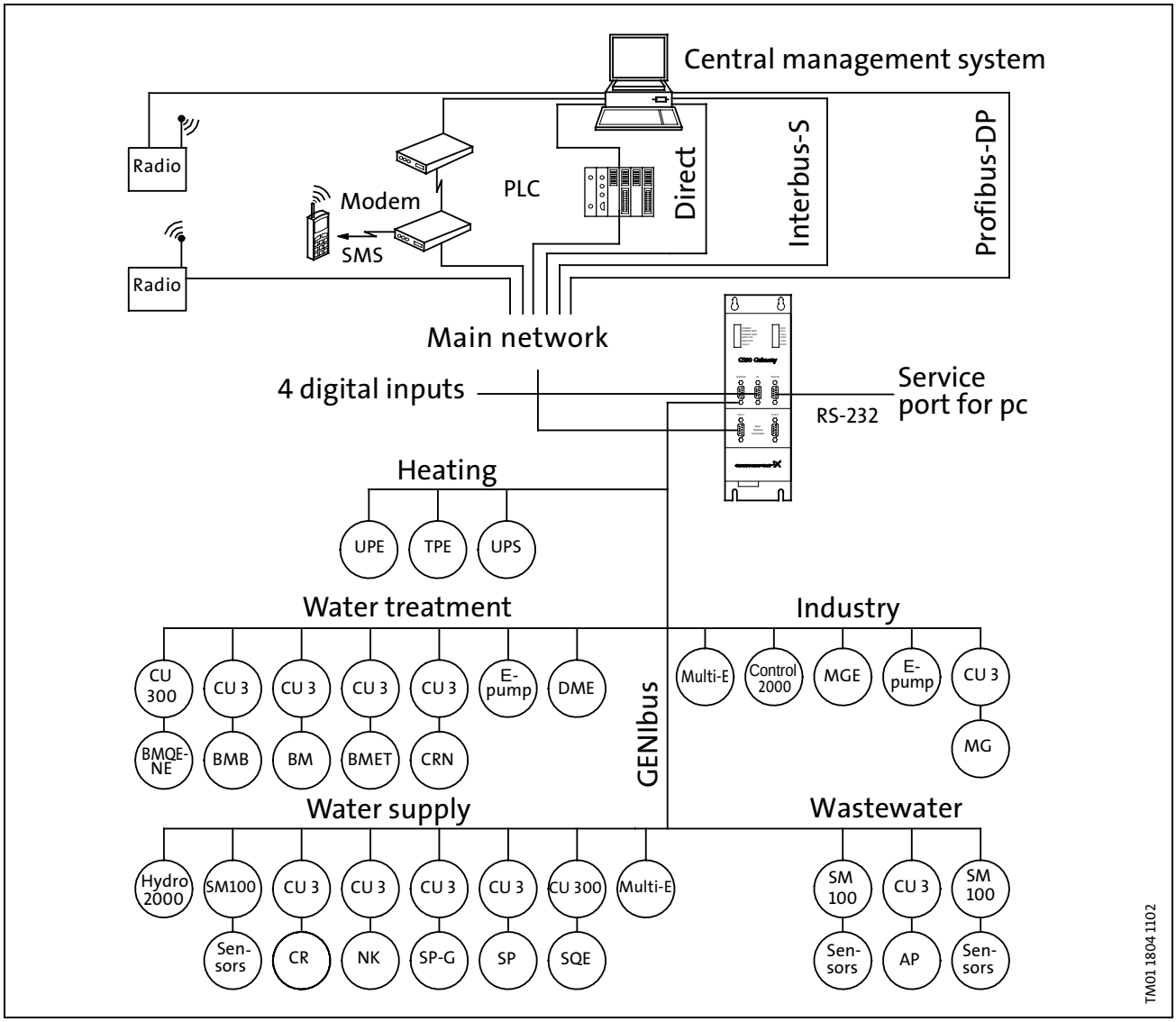
G100 - Gateway for communication with Grundfos products

The G100 offers a wide selection of options for integration of Grundfos products provided with GENIbus interface into main control and monitoring systems.

The G100 enables a pump installation to meet future demands for optimum pump operation in terms of reliability, operating costs, centralization and automation.



GR5940



TM01 1804 1102

Product description

The G100 Gateway enables communication of operating data, such as measured values, setpoints, etc., between Grundfos products with GENIbus interface and a main network for control and monitoring.

As indicated in the illustration on page 44, the G100 is suitable for use in applications such as water supply, water treatment, wastewater, building automation and industry.

Common to above applications is that downtime is usually costly, and extra investments are therefore often made to achieve maximum reliability by monitoring selected operating variables.

The day-to-day operation, such as starting and stopping of pumps, changing of setpoints, etc., can also be effected from the main system by communication with the G100. In addition, the G100 can be set up to send event-controlled status indications such as alarms via the SMS to mobile phones, and to make automatic alarm call-backs to a central management system.

Data logging

Besides the possibility of data communication, the G100 also offers logging of up to 350,000 time-stamped data. Subsequently, the logged data can be transmitted to the main system or a PC for further analysis in a spreadsheet or similar program.

For the data logging, the "PC Tool G100 Data Log" software tool is used. The tool is part of the PC Tool G100 package, which must be ordered separately.

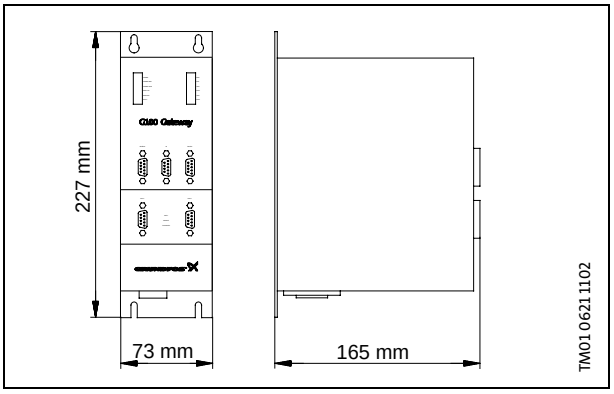
Other features

- Four digital inputs.
- Stop of all pumps in case of failing communication with the management system (optional).
- Access code for modem communication (optional).
- Alarm log.

Installation

Installation of the G100 is effected by the system integrator. The G100 is connected to the GENIbus as well as to the main network. Subsequently, all units on the GENIbus can be controlled from a central management system on the main network.

The "G100 Support Files" CD-ROM supplied with the G100 contains examples of programs to be used when the G100 is connected to the various main network systems. Included is also a description of the data points available in Grundfos products with GENIbus interface. The "PC Tool G100" software tool can be used for the G100 installation and use. To be ordered separately.



Technical data

Overview of protocols

Main system	Software protocol
INTERBUS-S	PCP
PROFIBUS-DP	DP
Radio	Satt Control COMLI/Modbus
Modem	Satt Control COMLI/Modbus
PLC	Satt Control COMLI/Modbus
GSM mobile phone	SMS, UCP

Other possible connections

GENIbus RS-485: Connection of up to 32 units.

Service port RS-232: For direct connection to a PC or via radio modem.

Digital inputs: 4.

Voltage supply: 1 x 110-240 V, 50/60 Hz

Ambient temperature: In operation: –20°C to +60°C (–4°F to +140°F)

Enclosure class: IP 20

Weight: 1.8 kg (4.0 lbs).

Accessories

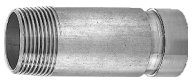
- PC Tool G100 package (to be ordered separately)
- G100 Support Files CD-ROM (supplied with product)

Product numbers

Product	Product number
G100 with Interbus-S expansion board*	96411134
G100 with Profibus-DP expansion board*	96411135
G100 with Radio/Modem/PLC-expansion board*	96411136
G100 Basic Version*	96411137
PC Tool G100 package	96415783

*Floppy disk with G100 Support Files included.

BM 4"

Photo of parts	Description	Specification	Part no.
 TM00 3702 0894	Victaulic coupling liner for welding ø42 x 30 mm	N-version	00100517
		R-version	00100971
 TM00 3703 0894	Victaulic coupling liner with external thread R 1¼ x 100 mm/BSPT	N-version	00100534
		R-version	00100965
 TM00 3705 0894	Victaulic style 77 coupling ø42 mm x 1¼"	NBR seal	00ID6786
		FKM seal	00ID6742
 TM00 3707 0894	Connecting kit for welding, straight	NBR seal N-version R-version	00105563
			00105982
		FKM seal N-version R-version	00105565
			00105981
 TM00 3708 0894	Connecting kit R 1¼"	NBR seal N-version R-version	00105564
			00105980
		FKM seal N-version R-version	00105566
			00105979
 TM00 3711 0894	180° bend for welding, ø42mm/1¼" Center distance: 165 mm/6.5 inch Total height: 127 mm/5.0 inch	R-version	00155926
 TM00 3706 0894	Hook spanner for 4" sleeve		00105029
 TM01 9907 3400	Bracket, 4"		96449565

BM 6"

Photo of parts	Description	Specification	Part no.
 TM00 3709 0894	Victaulic coupling liner for welding ø89 x 50 mm 3" x 2"	N-version	00150574
		R-version	00140968
 TM00 3711 0894	180° bend for welding, ø89 mm/3" Center distance: 300 mm/11.8 inch Total height: 210 mm/8.3 inch	N-version	00155544
		R-version	00155971
 TM00 3712 0894	Victaulic style 77 coupling, ø89 mm x 3"	NBR seal	00ID7664
 TM00 3713 0894	Hook spanner for 6" sleeve		00ID7669
 TM00 3714 0894	Connecting kit for welding, straight	NBR seal, N-version	00155542
		NBR seal, R-version	00155973
 TM00 3715 0894	Connecting kit, 180°	NBR seal, N-version	00155543
		NBR seal, R-version	00155972
 TM01 9907 3400	Bracket, 6"		96449184

BM 8"

Photo of parts	Description	Specification	Part no.
 TM00 3712 0894	Victaulic style 77 coupling 3": ø89 mm 4": ø114 mm 5": ø139 mm 6": ø168 mm	NBR seal 3"	00ID7664
		NBR seal 4"	96415463
		NBR seal 5"	96416739
		NBR seal 6"	00ID2279
 TM00 3709 0894	Victaulic coupling liner for welding	N-version 3"	00150574
		N-version 4"	96416743
		N-version 5"	96416744
		N-version 6"	96416745
 TM01 9907 3400	Bracket, 8"		96416762

Custom made pumps

Although the Grundfos BM product range offers a number of pumps for different applications, users require specific pump solutions to satisfy their needs.

Listed below is a range of options for customizing the BM pumps to meet the users' demands.

Contact Grundfos for further information or other requests than the ones mentioned below.

Available on request

Materials

Pump range	DIN W.-Nr.	AISI
BM 8A - BM 60	1.4539	904

Flange adapters

Flange type	Function	Materials
DIN flange	Grundfos DIN flange adapter for connection to counter DIN flange.	N-versions in 3", 4", 5" and 6"
JIS flange	Grundfos JIS flange adapter for connection to counter JIS flange	N-versions in 3, 4, 5 and 6"
---	Custom made flange adapter for connection to counter flange	N-versions in 3, 4, 5 and 6"

Motors

Other motors than those of the standard range are available on request:

- Rewindable motors
- Industrial motors
- Motors for severe duty, i.e. for liquid temperatures up to 90°C/194°F (only 8" motors).

Pumps with high flow rates

Pump type	Maximum flow Rate in [m³/h]		Maximum power consumption [kW]
	50 [Hz]	60 [Hz]	
BM 160	160	190	110
BM 215	215	260	150

Voltages

Other voltages than those of the standard range are available on request, see the MS product range.

Submittal Data Sheet

Company name: _____
Prepared by: _____
Phone number: ( ) -
Fax number: ( ) -
Date: _____ Page 1 of: _____
Quote number: _____

BM-N, BM-NE, BM-R

Booster Module

Client Information	
Project title:	Client name:
Reference number:	Client number:
Client contact:	Client phone no: ( ) -

Location Information			
For:	Unit:		
Site:	Service:		
Address:	City:	State:	Zip Code:

Application Information

Operating Conditions	max.	norm.	min.
Capacity (gpm)			
Suction Pressure (psig)			
Discharge Pressure (psig)			
Differential Head (ft)			
Hydraulic Power (hp)			
at designated capacity			
NPSH Available (ft)			

Service
Continuous: _____ Intermittent (starts/day): _____

Pumped Fluid	rated	max.	norm.
Fluid type:			
Fluid Temperature (°F)			
at designated temperature			
Specific Gravity			
Vapor Pressure (psia)			
Viscosity (cp)			

Fluid ph: _____ Chlorides (ppm): _____
Hazardous: _____ Flammable: _____
Other: _____
Corrosion/Errosion caused by: _____
% Solids: Max. particle size (in):

Pump Information	
Model Information from Type Key and Codes:	
Quantity Required:	Example: BM 3A-10N
Minimum required flow:	NPSH required at duty point:
Product Guide additional information pages	
Materials page number:	Performance curve page number:
Technical data page number:	

Motor Information			
HP:	Phase:	Voltage:	Enclosure: TEFC

Custom-built pump information (optional): _____

Additional Information

Quotation Text

BM

High pressure booster modules are used for boosting, liquid transfer and circulation in systems under a high static pressure.

SP submersible pump with motor built into a stainless steel sleeve in a totally sealed construction.

Modules of different sizes can be combined and connected either in series or in parallel to meet exact Q/H requirements.

The motor is a 3-phase AC motor.

Technical:
Rated flow: _____ GPM
Rated head: _____ Feet
Minimum liquid temperature: _____ °F
Maximum liquid temperature: _____ °F

Materials:
Material, pump: _____ AISI Stainless steel
Material, motor: _____ AISI Stainless steel
Material, sleeve: _____ AISI Stainless steel
Material, elastomer: _____

Installation:
Minimum ambient temperature: _____ °F
Maximum ambient temperature: _____ °F
Maximum inlet pressure: _____ PSI/°F
Maximum discharge pressure: _____ PSI/°F
Maximum operating pressure: _____ PSI/°F

Electrical data:
Rated power (P2): _____ HP
Frequency: _____ Hz
Rated voltage: _____ V
Rated current: _____ A
Service factor: _____
Rated speed: _____ RPM
Insulation class: _____

Additional:
Gross weight: _____ Lbs.
Shipping volume: _____ ft^3

BE > THINK > INNOVATE >

Being responsible is our foundation
Thinking ahead makes it possible
Innovation is the essence

L-BM-PG-002	2/03
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Subject to alterations.

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