



Virdis Energy GP3 Series

40-80 Technical Documentation



Manufacturer:	Viridis Energy OEM
Model:	GP Series 3xx- 40/80
Type:	Packaged PHE pumped 3 port control valve
Continuous Output Range:	litres/sec 0.24 – 1.99
Secondary temperatures:	°C 10 - 60
Primary Temperature:	°C 80
Primary flow rate:	litres/min 0.48 – 2.33
Duty Range:	kW 51 - 416
Power supply:	230v, 1phase, 50 Hz
Pumps:	Grundfos Magna 3 40-80 Standard
Controls:	GP Series Controller



Technical Specification GP Series 40-80

Operating Criteria	Rear Chassis Plate (Stationary):	Epoxy coated steel 25mm thick
	Front Chassis Plate (Moveable):	Epoxy coated steel 20mm thick
	Heat Transfer Plate:	316 grade stainless steel
	Gaskets:	EPDM
	Retaining Bolts:	16mm carbon steel
Connections	Maximum Primary Side Temperature:	110 °C
	Maximum Primary Side Pressure:	10.0 Bar
	Maximum Secondary Side Pressure:	6.0 Bar
	Primary Side Water Connections (standard):	Inlet - Cast Iron, DN40, PN10
		Outlet - 1.5" BSPM
	Secondary Inlet Connection (Cold Water Feed):	Bronze 1.5" BSPF
	Secondary Outlet Connection (Hot Water Service Flow):	Bronze 1.5" BSPF
Secondary Hot Water Service Return Connection:	Bronze 1" (or .75" BSPF when +1R HWS secondary pump fitted)	
Primary Components	Primary Pump (c/w Volt Free Trip Terminals):	Magna3 40-80F (1-phase) (or Magna3 D 40-80F on Duplex units)
	Primary Control Valve:	3-port, Cast Iron, DN40, PN10
	Primary Control Valve Actuator:	230V, modulating, motor open/close
Control Panel	<p>ABS enclosure</p> <p>Electronic PID temperature controller</p> <p>7-day time clock control of 2 temperature settings or 1 temperature and night "off", per day</p> <p>Safety extra low voltage (SELV) circuit for external "clock" control of 2 temperatures of operation or 1 temperature set point and "off"</p> <p>Safety extra low voltage (SELV) circuit for an external interlock</p> <p>Adjustable high limit and low limit temperature alarms, temperature alarm lamp, common volt free temperature alarm and selectable high temperature lockout modes</p> <p>Functional indication of: primary pump enable (P1 or P2) and valve open/closing</p> <p>LCD digital display of day and time, secondary flowtemperature and any faults</p> <p>Pump mode selescion including Duplex primary pump duty share and auto-changeover on pump fault (if fitted).</p> <p>Full menu driven interrogation of parameters and operating modes.</p> <p>500mA control fuse, 10A ouputfuse</p>	

Optional Extras:-

Duplex (Twin-Head) Primary Pump: (c/w Duty Share and Auto-changeover on Pump Fault as standard) (c/w Duty Share and Auto-changeover on Pump Fault as standard)	Magna3 D 40-80F (1-phase)
HWS Secondary Recirculation Pump (+1R):	UP20-45N (1-phase) (c/wbronze NRV)
HWS Secondary Transfer Pump (+1T) (dependent on model):	UP20-45N (1-phase), UPS25-55N (1-phase), UPS32-55N (1-phase), UPS32-80N (1-phase)
Additional Primary ShutOff Kit: Valve Actuator c/w Additional High Limit Thermostat	2-port, DZR Cast Brass Body, RP 11/2", PN40 230V, motor open/spring close 230V, manual reset, IP54
Additional High Limit Thermostat Only:	230V, manual reset, IP54
Primary Control Valve Actuator Positional Indication:	Auxiliary Changeover Contacts Only Potentiometer Only (1 or 2 kQ) Auxiliary Changeover Contacts and Potentiometer (1 or 2 kQ)
ISO Flexible Thermal Insulation Jacket.	
Additional Metal Cover to suit ISO Flexible Thermal Insulation Jacket.	
Dimensions and Weight (Excluding Options):	
Dimensions - Length x Width x Height	710x 480 x 1110 mm
Weight (Maximum)	150kg

Performance & Selection Guide

		GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
		05	7	9	11	13	15	17	19	21	23	25	27	29
Heat Load Required / Max. Duty	kW	51	91	132	167	208	241	272	301	330	354	380	397	416
Secondary Flow Rate at 60°C	l/s	0.24	0.44	0.63	0.8	0.99	1.15	1.3	1.44	1.58	1.69	1.82	1.9	1.99
	m ³ /h	0.9	1.6	2.3	2.9	3.6	4.1	4.7	5.2	5.7	6.1	6.6	6.8	7.2
Secondary Pressure Drop at Peak Output	kPa	21	28	32	33	35	35	35	35	35	34	33	31	29
Primary Flow Rate at 80°C	l/s	0.48	0.71	0.96	1.14	1.38	1.56	1.72	1.85	1.99	2.1	2.21	2.26	2.33
	m ³ /h	1.7	2.6	3.5	4.1	5	5.6	6.2	6.7	7.2	7.6	8	8.1	8.4
Primary Min.Head Available	kPa	6	6	6	6	6	6	6	6	6	6	6	6	6
Primary Return Temp, at Peak Output	°C	55	50	47	45	44	43	43	42	41	40	39	38	37

Approximate Head Available from Optional Secondary Recirculation Pump at:

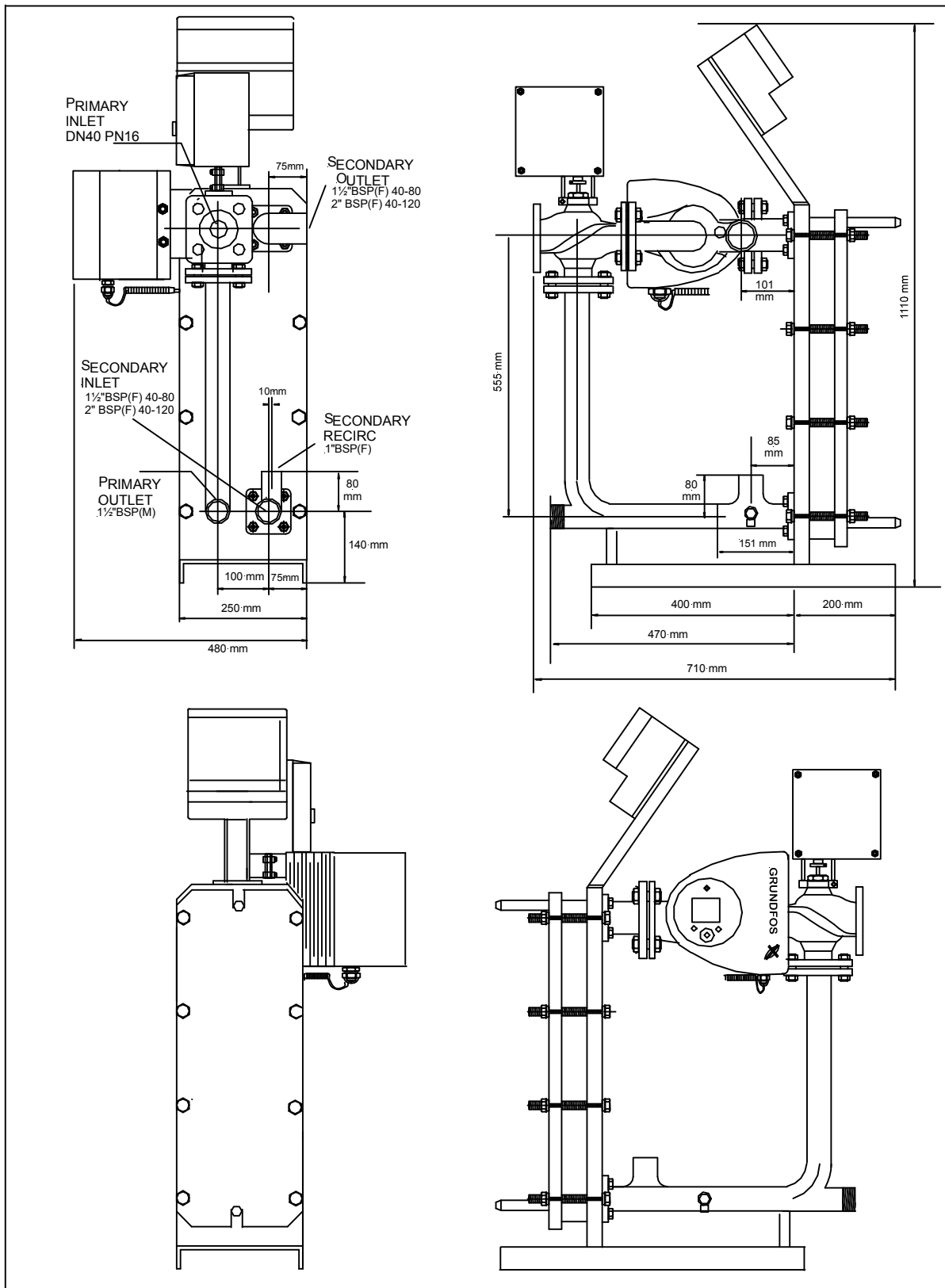
Recirculation Rate of 0.5m ³ /h	kPa	25	30	34	36	36	37	37	38	38	38	38	38	38
Recirculation Rate of 1.0m ³ /h	kPa	7	20	25	28	29	30	31	31	32	32	32	32	
Recirculation Rate of 2.0m ³ /h	kPa	~	~	~	~	2.5	7	10	12	13	14	15	16	17

"Tourist Hotel" by No. of Rooms		4	7	12	17	23	30	35	40	46	53	59	63	68
"Luxury Hotel" by No. of Rooms		~	5	8	12	16	21	24	28	31	35	39	42	45
Number of "Standard Flats"		2	6	11	18	27	37	48	59	71	80	92	98	107
Number of "Luxury Flats"		~	4	7	12	19	26	32	39	48	54	61	66	73
Hospital or Nursing Home by No. of Rooms		~	7	13	21	35	48	61	73	85	97	108	116	128
Leisure Centre or Sp		~	~	~	~	7	11	14	18	21	26	30	32	35

Notes

This selection guide uses diversity factors; actual site requirements should always be checked. For simultaneous operation of outlets calculate separately.

- * "Tourist Hotel" assumes a room with one shower and one wash hand basin.
- * "Luxury Hotel" assumes a room with one bath or one shower and one wash hand basin.
- * "Standard Flats" are classed as having one sink, one wash hand basin and one shower.
- * "Luxury Flats" are classed as having one sink, two wash hand basins and one bath.
- * Standard fittings are assumed in all cases.
- * For applications, kW duties, temperatures and pressure drops not listed, please contact Packaged Heat for an alternative sizing/selection.



Recommended Minimum Clearances for Maintenance:
 450mm front, 300mm pump side, 150mm other side



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