



Virdis Energy GP3 Series

40-120 Technical Documentation



Manufacturer:		Viridis Energy OEM
Model:		GP Series 3xx- 40-120
Type:		Packaged PHE pumped 3 port control valve
Continuous Output Range:	litres/sec	1.72 – 3.02
Secondary temperatures:	°C	60/10
Primary temperature:	°C	80
Primary flow rate:	litres/min	2.28 -3.42
Duty Range:	kW	360-632
Power supply:		230v, 1phase, 50 Hz
Pumps:		Grundfos Magna 3 40-120 primary
Controls:		GP Series controller



Technical Specification GP Series 40-120

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 2" BSPF
	Secondary Outlet Connection (Hot Water Service Flow):	Bronze 2" 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 40-120F (1-phase) (or Magna3 D 40-120F 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 selection 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 output fuse</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 40-120F (1-phase)
HWS Secondary Recirculation Pump (+1R):	UP20-45N (1-phase) (c/wbronze NRV)
HWS Secondary Transfer Pump (+1T) (dependent on model):	Magna3 40-80FN (1 Phase)
Additional Primary ShutOff Kit: Valve Actuator c/w Additional High Limit Thermostat	2-port, DZR Cast Brass Body, RP 11.5", 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	710 x 480 x 1110 mm
Weight (Maximum)	170kg

Performance & Selection Guide

		GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP	GP
		21	23	25	27	29	31	33	35	37	39	41	43	45
Heat Load Required / Max. Duty	kW	360	395	430	456	478	502	523	542	563	581	600	619	632
Secondary Flow Rate at 60°C	l/s	1.72	1.89	2.06	2.18	2.29	2.4	2.5	2.59	2.7	2.78	2.87	2.96	3.02
	m ³ /h	6.2	6.8	7.4	7.8	8.2	8.6	9	9.3	9.7	10	10.3	10.7	10.9
Secondary Pressure Drop at Peak Output	kPa	40	40	40	39	38	36	35	34	33	32	31	30	30
Primary Flow Rate at 80°C	l/s	2.28	2.47	2.67	2.77	2.85	2.95	3.05	3.1	3.17	3.23	3.3	3.39	3.42
	m ³ /h	8.2	8.9	9.6	10	10.3	10.6	11	11.2	11.4	11.6	11.9	12.2	12.3
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	43	42	42	41	40	40	39	39	38	38	37	37	36

Approximate Head Available from Optional Secondary Recirculation Pump at:

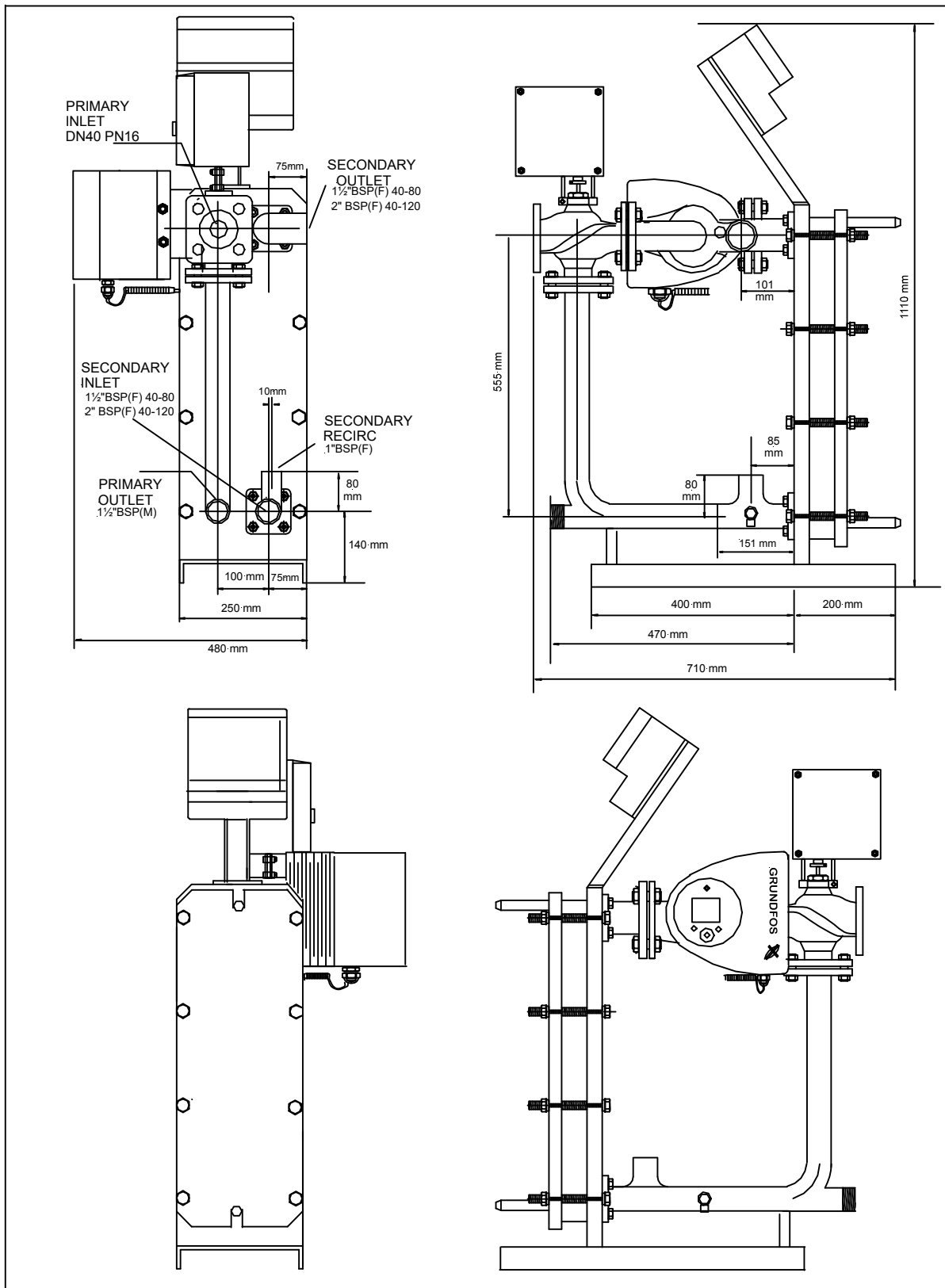
Recirculation Rate of 0.5m ³ /h	kPa	38	38	38	38	38	38	38	38	38	38	38	38	38
Recirculation Rate of 1.0m ³ /h	kPa	32	32	32	32	32	32	32	32	32	32	32	32	32
Recirculation Rate of 2.0m ³ /h	kPa	13	14	15	16	16	17	17	17	17	18	18	18	18

"Tourist Hotel" by No. of Rooms		55	62	71	77	82	90	97	103	108	113	120	126	130
"Luxury Hotel" by No. of Rooms		36	42	48	53	57	61	65	69	73	76	80	85	88
Number of "Standard Flats"		85	98	114	125	135	149	161	171	182	190	201	212	220
Number of "Luxury Flats"		56	65	77	88	95	107	116	123	133	139	146	155	160
Hospital or Nursing Home by No. of Rooms		100	115	136	155	168	185	198	210	226	239	251	264	272
Leisure Centre or Sp		27	32	37	41	45	50	55	58	62	65	70	75	77

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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