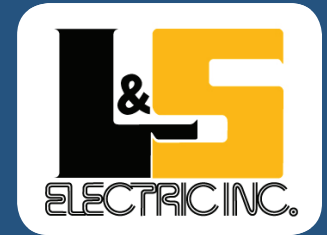


L&S Electric HPU S-Series

Model S20



Dedicated People, Quality
Products, and Above All, Service.

The L&S Standard Hydraulic Power Unit (HPU) S-Series is a compact assembly designed for ease of maintenance, reduced operating costs, and long-term reliability for small hydro turbines.

Application

- L&S modular HPU's are designed for the following applications:
 - Replacement of existing high-pressure HPU's
 - Replacement of existing low-pressure HPU's that are converted to higher pressures
 - New installations
- Governor actuator(s), turbine inlet and bypass valves, brakes

Sizing & Design

- Each hydraulic pressure system can be designed to meet IEEE 125-2007 standard for high-pressure oil systems
- The systems are designed to consider the difference in characteristics of nitrogen charged systems versus air charged systems
- Cyclic pump operation provides energy efficient system

Oil Sump/Cover

- Fully painted reservoir
- End cover makes cleaning easy
- Sealed design, all holes and other entry points into sump are sealed
- Integral oil breather/filler
- Internal baffle to provide longest oil path between pump inlet and oil returns. Ensures that entrained air has time to disperse and oil debris particles will settle before oil reaches pump suction
- Duplex oil filter

Pumps and Pump Control

- Contains manual switches and indicators for manual/auto operation
- Designed for low operating cost and ease of maintenance
- High efficiency, inverter duty motors
 - Motor efficiency complies with NEMA Premium™ efficiency levels
 - Ball bearing and inverter duty designs provide long life
- All modules designed to maximize module life and minimize pump cavitation/noise
- Pump control cabinet with selector switches and indicating lights
- C-Face motor/pump coupling design eliminates coupling alignment requirements
- Relief Valve / Check Valve / Pump Isolation Valve for every pump module
- Pump/motor assembly replaceable as a "module"
- One or two pumps available
- Available hand pump
- Single disconnect for both pumps
- Hardwired pump control circuit

HPU Instrumentation

- Solid-state pressure switches for pump control circuit and for alarm and trip
- High sump temperature and low-low level switches

Additional Features

- L&S D03 standard hydraulic control manifold (consult factory for flow and voltage requirements)
- Up to four auxiliary valve stations available for needle control valves, bypass valves, TIV control valves, generator brake control valves, etc.

L&S Electric Engineering Division

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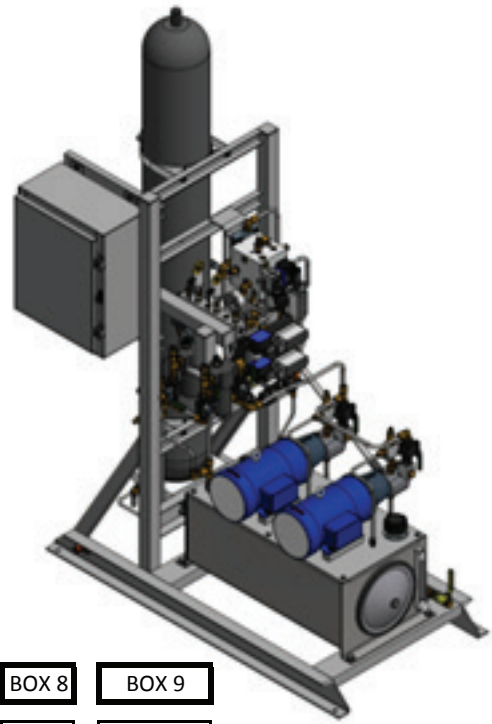
Proven Solutions for the Hydroelectric Industry

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Reservoir Size	20 gallon
Pump Module Arrangements	1 or 2 pump modules standard
Pump Modules	1, 2, 3 HP
Motor Voltages	208/230/460 VAC @ 60 Hz
Operating Pressure Range	Nominal = 0 – 2200 PSIG Maximum design pressure is 3000 PSIG, includes pump relief valve set point.
Control Valves	All designs support mounting single control valve on reservoir cover Larger reservoirs support additional valve options
Accumulator Systems	15 gallon bladder accumulator Sump mounted



Select from the available options to build a model number
EXAMPLE: S20-2P-2-A-M-14/24-NP-15-2

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
S20							15	
	1P 2P	1 2 3	A B	M H	14/24 28/24 40/24 14/125 28/125 40/125	HP NP		0 2 4

BOX 1: RESERVOIR SIZE	
S20	20 GALLON

BOX 4: MOTOR VOLTAGE	
A	208-230 VAC - 60 HZ
B	460 VAC - 60HZ

BOX 7: HAND PUMP	
HP	HAND PUMP KIT
NP	NO HAND PUMP KIT

BOX 2: PUMP QUANTITY	
1P	SINGLE PUMP
2P	DUAL PUMP

BOX 5: PRESSURE RANGE	
M	MEDIUM (0 - 1500 PSI)
H	HIGH (1500 - 2300 PSI)

BOX 8: ACCUMULATOR SIZE	
15	15 GALLON BLADDER ACCUMULATOR

BOX 3: MOTOR SIZE & PUMP OUTPUT	
1	1 HP - .7 GPM
2	2 HP - 1.3 GPM
3	3 HP - 1.9 GPM

BOX 6: D3 CONTROL MANIFOLD FLOW AND COIL VOLTAGE	
14/24	14LPM / 24 VDC
28/24	28LPM / 24 VDC
40/24	40LPM / 24 VDC
14/125	14LPM / 125 VDC
28/125	28LPM / 125 VDC
40/125	40LPM / 125 VDC

BOX 9: AUXILIARY VALVE STATIONS	
0	NO AUX. STATIONS
2	TWO AUX. STATIONS
4	FOUR AUX. STATIONS
Note: Does not include valving. Hydraulic valves quoted separately.	

NOTE: To complete order, auxiliary valve requirements must be identified for L&S Electric, Inc. to include with quotation.

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