

ITES GLASS-LINED INDUSTRIAL SOLAR/ELECTRIC WATER HEATER

ITES - 1000/1500/2000/2500/3000

Solar/electric water heater for industrial and commercial applications.



- Carbon steel tank with ultra coat glass lining
- Maximum working pressure 7 bar
- Manhole 400mm
- T&P relief valve factory supplied
- Factory installed 100 mm insulation with ABS jacket, meeting new Ecodesign standards in Europe
- Electric back-up heating with incoloy sheeted elements (15 to 60 kW)
- Factory mounted control panel including main power disconnect door interlock switch, transformer for 230 Volt control circuit, contactors, solar control panel, step indication lights and override switch, immersion control and hi-limit thermostat

SAMPLE SPECIFICATION

The heater(s) shall be A. O. Smith ITES series Commercial Electric water heater Model Number ITES_(1000/1500/2000/2500/3000)___ or an approved equal. Heater(s) shall be rated at _(15/30/45/60)_ KW, 400 V, 3 phase, 50/60 cycle AC. The heater shall be vertical. Vessel shall be constructed to European Pressure Directive for 7 bar working pressure. Vessel shall be glass-lined with anodic protection. Entire vessel shall be insulated with 100mm insulation with ABS cladding. The electrical and solar controls will be mounted on the heater in an IP 55 control cabinet. A combined temperature and pressure gage will be on the front of the heater. The heater will have a build in solar fluid heat exchanger suitable for up to 50 solar collectors. The solar fluid circulating pump will be controlled by the heaters control panel via a thermally protected switch relay. There shall be ___(1 or 2)___ individually replaceable ___(15 or 30)___ kW, flange mounted, incoloy sheathed heating elements each complete with prewired terminal leads for electric back-up heating. These elements will be switched by magnetic contactors which are operated by a 230V fused control circuit protected by manual reset high limit. Control circuit is activated by a master pilot switch. Each element will have an override switch for manual de-activation. The controller shall make maximum use of solar heating and switch on back-up only if solar heat does not satisfy hot water demand. The control of the contactors shall be in ___(1 or 2)___ stages through thermostatic step control. This control shall fully automatically maintain the set temperature via solar heating and/or electric back-up. It shall prevent the entire electrical load from being switched on instantaneously. The entire water heating package shall be prewired to solderless terminal lugs, factory tested, complete with ASME temperature and pressure relief valve and bear the CE label for the electric components. Heater(s) shall have a 3 year limited warranty as outlined in the written warranty. Fully illustrated instruction manual included.

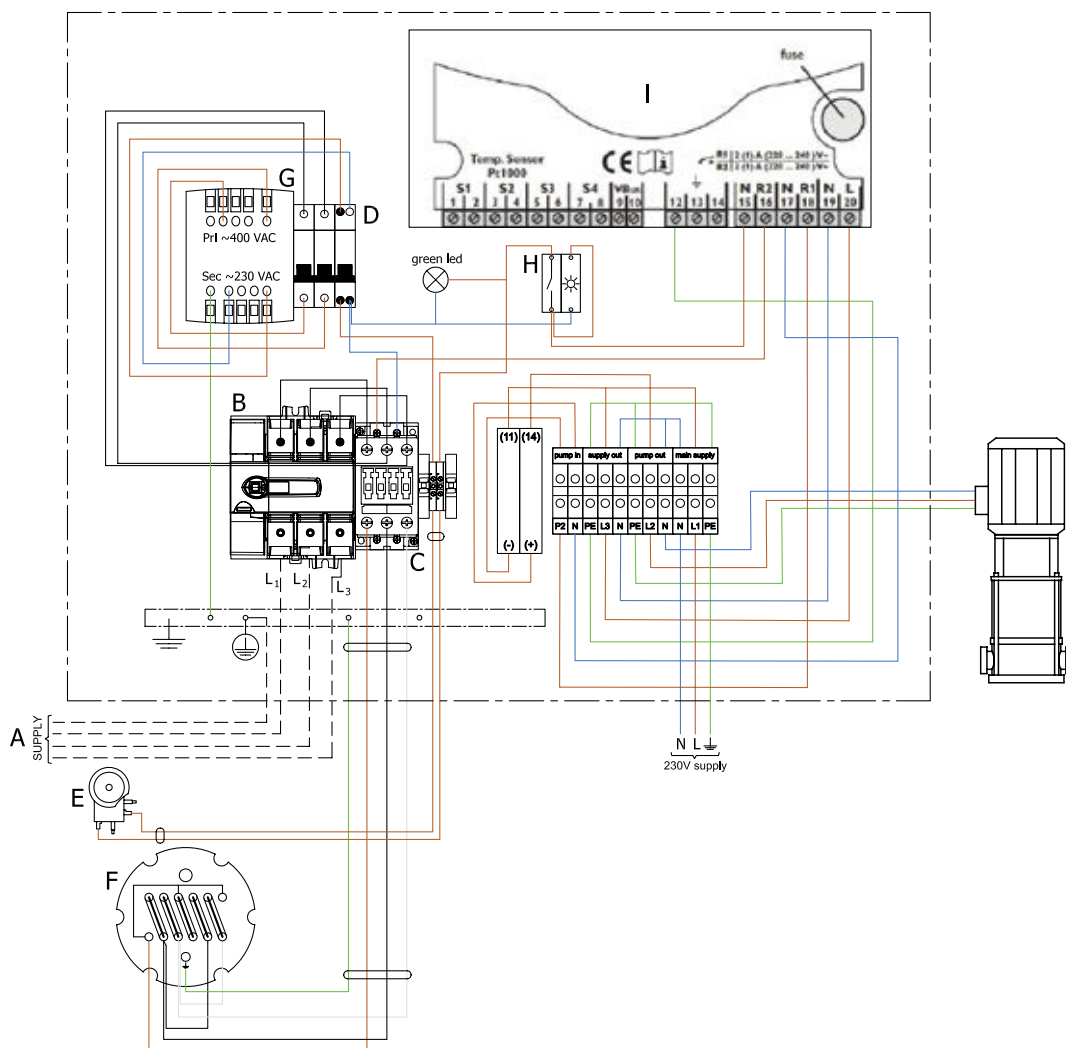


| | | ITES 1000 | ITES 1500 | ITES 2000 | ITES 2500 | ITES 3000 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|
| General | | | | | | |
| Volume | litres | 1000 | 1550 | 1820 | 2550 | 2820 |
| Empty weight | kg | 315 | 434 | 456 | 604 | 632 |
| Max. floor load | kg | 1315 | 1984 | 2276 | 3154 | 3452 |
| Shipping weight | kg | 355 | 474 | 496 | 644 | 672 |
| Stand by heat Loss | kW/24 hr | 3,0 | 3,7 | 4,1 | 5,6 | 5,8 |
| Max. operating pressure tank | kPa (bar) | | | 700(7) | | |
| Test pressure tank | kPa (bar) | | | 1100(11) | | |
| Max. operating pressure heat exchanger | kPa (bar) | | | 600 (6) | | |
| test pressure heatexchanger | kPa (bar) | | | 1200 (12) | | |
| Max. water temperature tank | °C | | | 85 | | |
| Max. water temperature heat exchanger | °C | | | 110 | | |
| Anodes | - | | | 3 | | |
| Capacity heat exchanger | kW | 135 | 136 | 136 | 144 | 144 |
| Primary flow 80/60°C | l/h | 6.235 | 6.485 | 6.485 | 6.871 | 6.871 |
| Pressure loss | mbar | 259 | 830 | 830 | 695 | 695 |
| Heat exchange surface | m2 | 5,13 | 5,2 | 5,2 | 5,5 | 5,5 |
| Maximum number of solar collectors | - | 50 | 50 | 50 | 50 | 50 |

BACK-UP HEATING

ITES

| heating capacity in kW | recovery capacity in liters per hour | |
|------------------------|--------------------------------------|---------|
| | 15-40°C | 15-60°C |
| 15 | 516 | 287 |
| 30 | 1.032 | 573 |
| 45 | 1.548 | 860 |
| 60 | 2.064 | 1.147 |



TERMINAL BLOCK CONNECTIONS

- ⊥ Earth
- N Neutral
- L1 Fase-input
- L2 Fase-input
- L3 Fase-input

COMPONENTS

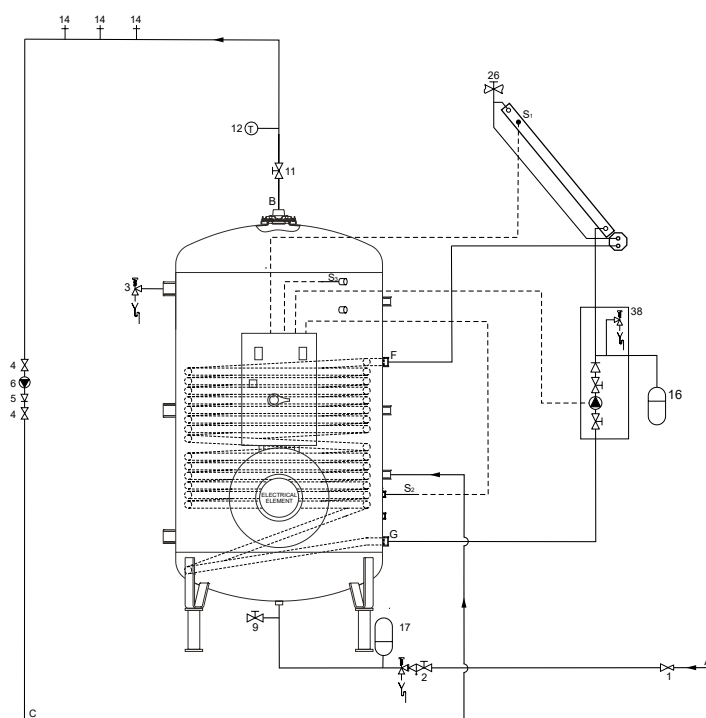
- A Power supply
- B Main power disconnect switch door interlock
- C Relay
- D Automatic fuse
- E Combined control/safety thermostat
- F Electrical heating element
- G Transformer 400VAC/230VAC
- H Manual override switch and indication light
- I Solar control

- 1 Pressure reducing valve (mandatory if the mains water pressure is too high)
- 2 Inlet security group combining 8 bar pressure relief valve (15) and check valve (5) (mandatory)
- 3 T&P valve (mandatory - factory delivered)
- 4 Stop valve (recommended)
- 5 Non-return valve (mandatory)
- 6 Circulation pump (optional)
- 9 Drain valve
- 11 Stop valve (recommended)
- 12 Temperature gauge (recommended)
- 15 Pressure relief valve
- 16 Expansion vessel
- 17 cold water supply expansion tank (recommended)

- A Cold water supply
B Hot water outlet
C Circulation pipe
F Solar fluid in
G Solar fluid out
S Tank temperatures sensor openings

In the instruction manual you will find all the necessary information regarding connection, installation and maintenance of the product; including information on the electrical connections.

Information regarding the recycling or disposal of the product can also be found in the manual. This manual is delivered with the appliance and can also be found on our website; www.aosmithme.com



| | | ITES 1000 | ITES 1500 | ITES 2000 | ITES 2500 | ITES 3000 |
|--------------------------|---------------------------------|--------------|--------------|--------------|--------------|--------------|
| A | Total height without legs | 2160 | 1985 | 2170 | 2045 | 2170 |
| D | Diameter without insulation | 790 | 1100 | 1100 | 1400 | 1400 |
| | Diameter with insulation | 990 | 1300 | 1300 | 1600 | 1600 |
| G | Heigth heat exchanger outlet | 430 | 350 | 350 | 430 | 430 |
| F | Heigth heat exchanger inlet | 1280 | 1305 | 1305 | 1280 | 1280 |
| M | Height cold water inlet w legs | 170 | 220 | 220 | 220 | 220 |
| N | Height hot water outlet w legs | 2310 | 2185 | 2370 | 2245 | 2370 |
| R | Height circulation connection | 350 | 400 | 400 | 480 | 480 |
| S | Height immersion well | 1075 | 950 | 1045 | 880 | 1045 |
| T | Height T&P connection | 1805 | 1500 | 1690 | 1380 | 1610 |
| Z | Height of the legs | 150 | 200 | 200 | 200 | 200 |
| | | | | | | |
| 1 | Cold water inlet | Rp 2 | | | | |
| 2 | Hot water outlet | Rp 2 | | | | |
| 3 | Inlet heatexchanger | Rp 1¼" | | | | |
| 4 | Outlet heatexchanger | Rp 1¼" | | | | |
| 8 | Connection anode | Rp ¾ | | | | |
| 11 | Connection/alt cold water inlet | Rp 2 | | | | |
| 12 | Connection | Rp 2 | | | | |
| 14 | Connection | Rp 2 | | | | |
| All dimensions are in mm | | | | | | |

