

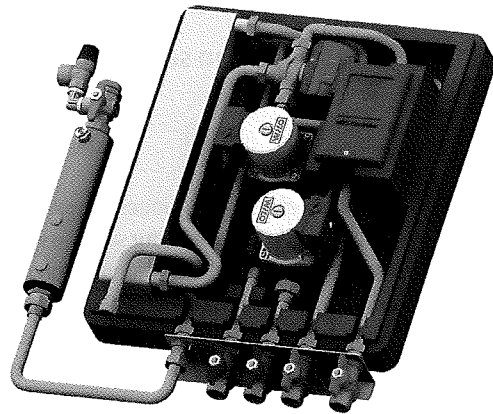
Technology for large systems: Solex-Max is a cascade of separate systems for collector fields with up to 430 m<sup>2</sup>.

Graphic: PAW

Seitron Srl is another solar controller specialist from Italy. The company has also added pump components to its product range. Five different types of controllers can be integrated in the insulated shell. The stations are available for single and double strings. And there are also some new controllers. Sales Manager Giorgio Giancarli says, "We have expanded our spectrum to seven types." The Elios range of hot water solar units now consists of four devices. Elios Mini and Easy are double-circuit controllers that can handle back-up heating systems in addition to the solar circuit. Elios Din and Midi are triple-circuit controllers that also allow the speed of the pump to be varied. Like the Midi, the Elios 25 Group has a graphics-enabled display to represent the solar array's hydraulics diagram. The Elios 25 Standard and Varioplus can be used in solar thermal systems that support heating systems. All Seitron solar controllers have a function for the solar heating of swimming pools.

Ostaco AG (Taconova brand) of Switzerland has come up with a new tank-loading system called Megasphere. Megasphere loads solar heat into the buffer tank via a plate heat exchanger. It has a controller that gets information about flow rates and the temperature from two direct sensors in the primary and secondary return lines. The controller then sets the speed for the circulation pumps in the primary and secondary circuit. The sensors can set the flow rates at anywhere from 1 to 20 L/min. The pump speed can be set anywhere between 17 and 100% of the maximum value. Because the separator system already has flow rate sensors, the controller can very accurately determine the solar energy yield. The controller can also display current heat flow values or cumulated heat yield for the day, week, month, or entire year. The loading station has a three-way valve that feeds solar energy to the top or bottom of the buffer tank depending on the amount of incident sunlight

and the resulting temperature level. For hydraulic compensation in collector fields with multiple strings, Taconova offers solar centers that regulate volumetric flow. The SD Solar HT high temperature setter bypass is available in versions for 2 to 12 L/min, 8 to 30 L/min, 10 to 40 L/min and 20 to 70 L/min. The tolerance range is  $\pm 10\%$ . The string control valve can be run constantly at 185 °C and can even withstand 195 °C for brief periods. It is designed for pressures up to 16 bar.



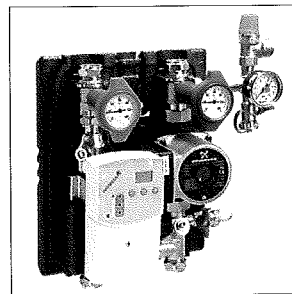
Taconova's Megasphere is a separator system for the loading of buffer storage tanks.

Photo: Taconova

Watts Industries Deutschland GmbH recently began manufacturing integrated solar controllers within the Watts Group. On request, Watts also uses direct sensors. Flow Box 8010 has a compact design. The pump group can handle a maximum temperature of 120 °C, though long-term operation above 100 °C should be avoided. One special feature is the Watt-Flow balancing



Italian solar controller manufacturer Seitron also offers complete solar stations.



Flow Box 8010 has a compact design.

Photo: Watts

valve. The advantage of this unit is that the heat-carrying liquid does not flow directly through the sight-glass of the flow meter. This ensures a high level of intrinsic safety by minimising soiling.

### Valves and expansion tanks for high temperatures

Italian valve manufacturer Mut Meccanica Tovo S.p.A. has come up with a new series of temperature-resistant engine valves called Mut solar that can be used in solar circuits. These two and three-way valves can be operated at temperatures up to 160 °C and pressures up to 4 bar.

Not all expansion tanks come from Italy. Switzerland's Pneumatex AG has been making expansion tanks with butyl bags since 1995. The manufacturer says that these bags are especially good at maintaining gas