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Product Name :	**Product Code :**
Cooling Using The Peltier Effect	DM875

Description :

Cooling Using The Peltier Effect

Technical Specification :

Cooling Using the Peltier Effect
Peltier elements utilize the thermoelectric effect of some semiconductors. The thermoelectric effect is the reverse of the known thermopower effect which is used when measuring temperatures using thermocouples. If current flows through a Peltier element, one end of the semiconductor becomes hot and the other cold. By a suitable connection of p- and n-doped semiconductor materials the refrigeration capacity can be increased sufficiently to be usable.
The benefits of cold production using Peltier elements are: Peltier elements are wear and maintenance-free, noiseless, independent of position and easy to adjust in their refrigeration capacity via the supply voltage. In addition, no refrigerants are required. Peltier elements are used for small capacities in thermography as beverage chillers or in medical engineering. Their low efficiency is a disadvantage.
Functional model of a Peltier refrigeration system
Experimental unit with clear design of all components at the front
Water-cooled Peltier element
Shared water circuit for heating and cooling with tank, pump and flow meters
Electrical power freely adjustable via potentiometer
Digital displays for temperature, current and voltage
Flow meter measurement of the water flows via rotameters

Technical data:
Peltier element

Refrigeration capacity: 191,4w
Current: 22,6a
Voltage: 16,9v
Temperature difference: 77,8k
Hot side temperature: 50°c
Pump
Power consumption: 120w
Flow rate: 1000l/h
Head: 30m
Water tank
Content: 7l
Measuring ranges
Current: 0…20a
Voltage: 0…200v
Temperature: 2x -30…80°c, 4x 0…100°c
Flow rate: 2…27l/h, 15…105l/h
230V, 50Hz, 1 phase

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