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Heat Flow Plates FQAx



- For determining the heat flow density.
- Application-oriented designs, consisting of a meander of opposing thermocouples that are embedded in a substrate.
- In case of thick substrates no lateral circulation of the heat flow because of sufficient meander shell zone.
- Software for U value measurement, see chapter Software

! Each heat flow plate has been assigned a calibration value, which corresponds to the heat flow density in W/m^2 when the plate provides an output of 1 mV. The calibration value will be stored as factory-setting in the ALMEMO® connector so that ALMEMO® devices will immediately indicate the current heat flow density in W/m^2.

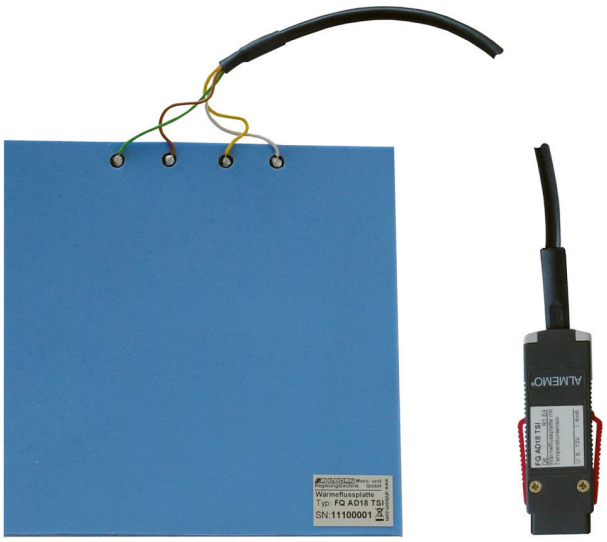
Technical Data:

Type	Dimensions (mm)	Meander Size (mm)	Substrate	Temperature Stability	Calibr. Val. appr. ($W/m^2 \approx mV$)	Accuracy of Calibr. Value
117	100 x 30 x 1.5	80 x 20	epoxy resin	-40 ... 80 °C	< 50	5 % at 23 °C
118	120 x 120 x 1.5	90 x 90	epoxy resin	-40 ... 80 °C	< 15	5 % at 23 °C
119	250 x 250 x 1.5	180 x 180	epoxy resin	-40 ... 80 °C	< 8	5 % at 23 °C
120	33 Ø x 1.5	20 Ø	epoxy resin	-40 ... 80 °C	< 150	6 % at 23 °C
117SI	100 x 30 x 3	80 x 20	silicone	-40 ... 80 °C	< 50	5 % at 23 °C
118SI	120 x 120 x 3	90 x 90	silicone	-40 ... 80 °C	< 15	5 % at 23 °C
119SI	250 x 250 x 4	180 x 180	silicone	-40 ... 80 °C	< 8	5 % at 23 °C

Accessories	Order no.
Adhesive tape for room temperature	**ZQ9017KB**
Self-adhesive film 24 x 100 cm for room temperature	**ZQ9017KF**
Heat-conducting paste for surface measurement, tube 20 ml, operative range -30 to +200 °C	**ZB9000WP**

Types incl. connecting cable, 2 m, with ALMEMO® connector and manufacturer's test certificate		Order no.
Model	**Application**	
117	for even surfaces, e.g. casement sections	**FQA017C**
118	for universal applications, e.g. solar-electric systems and insulating plates	**FQA018C**
119	especially for constructional industry, brickwork insulating plates, old buildings	**FQA019C**
120	small heat flow plate, e.g. for medicine, veterinary medicine, small components etc.	**FQA020C**
117 SI	flexible heat flow plate, suitable for even surfaces, e.g. casement sections	**FQA017CSI**
118 SI	flexible heat flow plate, suitable for even surfaces, e.g. solar-electric systems and insulating plates	**FQA018CSI**
119 SI	flexible heat flow plate, suitable for even surfaces	**FQA019CSI**

Digital heat flow plate FQADx, with integrated temperature sensor for automatically correcting the heat flow plate's temperature coefficient, with ALMEMO® D6 plug



- This automatically corrects the heat flow plate's temperature coefficient using a miniature NTC sensor integrated in the heat flow plate for the purpose of measuring the plate's mean temperature.
- It measures heat flows and temperatures using an A/D converter incorporated in the ALMEMO® D6 plug.
- Two measuring channels are programmed (at our factory).
- Plate's mean temperature (°C, t) Heat flow, temperature-compensated (W/m², fq)



model 117, 118, 119

Technical Data

Heat flow sensor (see table on previous page)	
Accuracy of calibration value at nominal temperature	5 %
Nominal temperature	23 °C
Temperature coefficient	-0.12 % / K (epoxide plate) or -0.17 % / K (silicone plates)
Temperature sensor	
Sensor element	Miniature NTC type N
Accuracy	±0.5 K at 0 to +80 °C

A/D converter incorporated in ALMEMO® D6 plug	
Input 1	NTC sensor (clamp connector in plug)
Resolution	0.01 K
Linearization	computing method according to Galway Steinhart (no approximations)
Accuracy	±0.05 K
Nominal temperature	23 °C ±2 K
Temperature drift	0.004 %/K (40 ppm)
Input 2	Voltage mV (clamp connector in plug)
Measuring range	0 to 26 mV, 0 to 260 mV
Precision class	AA, see chapter Data Loggers and Measuring Instruments
Refresh rate	0.4 seconds for both channels
Supply voltage	6 to 13 VDC
Current consumption	4 mA

Accessories

see previous page

General features and accessories, ALMEMO® D6 sensors see chapter Data Loggers and Measuring Instruments

Variants including manufacturer's test certificate		**Order no.**
Heat flow plate with integrated temperature sensor cable permanently fitted, PVC, length 2 meters with ALMEMO® D6 plug.		
Type 117	Substrate Epoxy resin, Dimensions 100 x 30 x 1.5 mm	**FQAD17T**
Type 118	Substrate Epoxy resin, Dimensions 120 x 120 x 1.5 mm	**FQAD18T**
Type 119	Substrate Epoxy resin, Dimensions 250 x 250 x 1.5 mm	**FQAD19T**
Type 117 SI	Substrate Silicone, Dimensions 100 x 30 x 3 mm	**FQAD17TSI**
Type 118 SI	Substrate Silicone, Dimensions 120 x 120 x 3 mm	**FQAD18TSI**
Type 119 SI	Substrate Silicone, Dimensions 250 x 250 x 4 mm	**FQAD19TSI**

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