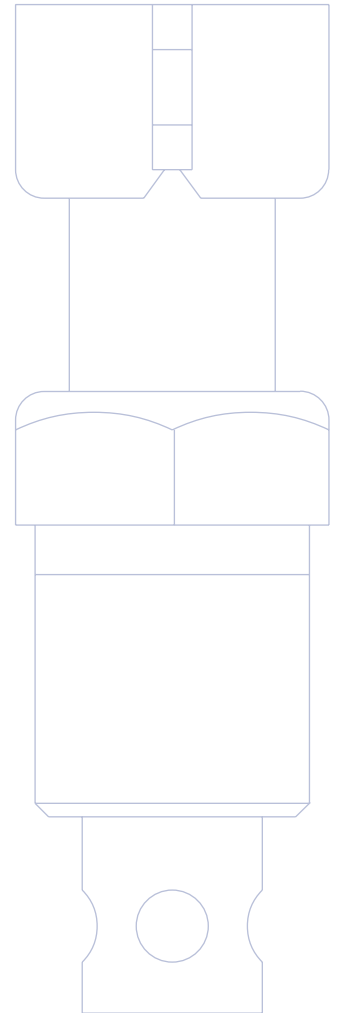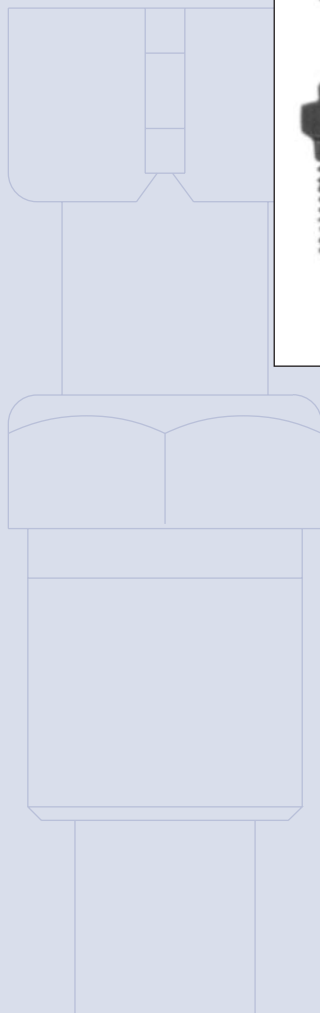# SAUER DANFOSS

1090173, 1090174
Temperature
Sensor

Product Electrical
Installation

Tech Note

E1™
COMPLIANT

1090173, 1090174 Temperature Sensor
Product Electrical Installation Tech Note
Contents

LITERATURE REFERENCES   Refer to *1090173, 1090174 Temperature Sensor Technical Information* **BLN-95-9063** for complete product electrical and mechanical specifications.

Refer to *1090173 Temperature Sensor Compliant Function Block User's Guide* **11007104** and *1090174 Temperature Sensor Compliant Function Block User's Guide* **11007117** for compliant function block set-up information.

Technical literature is available at: www.sauer-danfoss.com

Revision history

Revision date	Page	Change	Remarks
02/14/2006			Initial release
02/22/2006	3	Table corrected	Rev-A
05/22/2006		Content change on various pages	Rev-B

Front cover illustrations: 2384,2385

PRODUCT IMAGE

DESCRIPTION/THEORY OF OPERATION

Sauer-Danfoss 1090173 (liquid) and 1090174 (air) temperature sensors are thermistor-type temperature sensors. The resistance of the sensing element is a function of temperature of the measured fluid. The relationship between measured temperature and sensing element resistance is non-linear. The *PLUS+1™ temperature sensor compliant function block* algorithm is designed to provide a measured temperature output for a given resistance, based on the table below:

ELECTRICAL SPECIFICATIONS

Measured temperature versus sensing element resistance

Measured Temperature °C	Resistance Ω	
	Nominal	Tolerance
50	810.9	± 5%
80	283.0	± 5%
100	152.9	± 8%
125	76.9	± 8%

The liquid and air temperature sensors are specifically designed to interface with PLUS+1 devices that have AIN/TEMP/Rheo input pins. When configured in the TEMP/Rheo mode, the input pin has a 1.33 KΩ pull up resistor to + 5 Vdc. It will provide up to 3.75 mA current to the temperature sensor which can be measured.

Maximum over-voltage: Battery voltage should never be applied to the temperature sensors.

PINOUT

Temperature sensor pinout

2 pin Delphi-Packard® Metri-Pack™ 150 series connector	Connect either pin to a PLUS+1 controller AIN/TEMP/ Rheo input pin and the other to the controller ground.

PIN COMPATIBILITY

PLUS+1 module pin type/temperature sensor pin compatibility

PLUS+1 module pin type	Acceptable use: device pin number
Power ground -	Either sensor pin may be connected to this device pin
AIN/Temp/Rheo	Either sensor pin may be connected to this device pin

MATING CONNECTOR

Temperature sensor mating connector parts list

2 pin connector	Quantity	Ordering information
Connector	1	Packard, 12162197
Terminal (16 to 18 gauge)	2	Packard Metri-Pack 2124075-1
Sauer-Danfoss mating connector kit	1	K23436

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