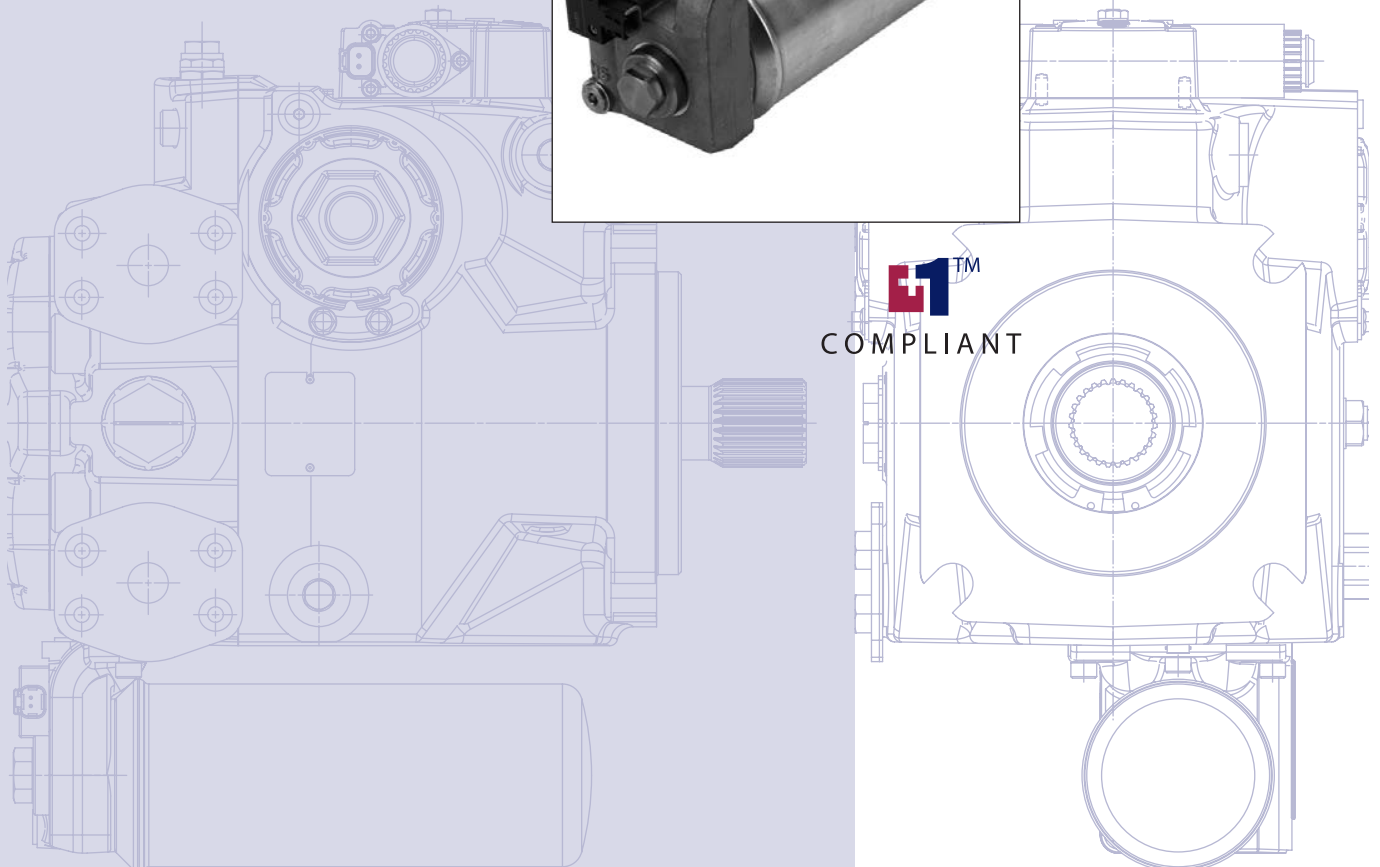




H1 Filter Bypass Sensor

Product Electrical Installation

Tech Note



 TM
COMPLIANT

Version

Revisions

Date	Page	Changed	Rev.
21 Jul, 2006			A

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Illustrations: F101 501, F11 502, F101498, 2400, P005 265, 2401, P003 195, 2402



H1 Filter Bypass Sensor

Product Electrical Installation Tech Note

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References

Refer to the *H1 Axial Piston Pumps Technical Information 520L0823* for complete product electrical and mechanical specifications.

Refer to *H1 Filter Bypass Function Block User's Guide 70004849* for compliant function block set-up information.

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

Product Image



Nomenclature

H1 P

Only certain filtration options for the H1 pump utilize the Filter Bypass Sensor. Please refer to the pump’s nomenclature to determine if the pump is equipped with the proper option. The nomenclature can be found on the pump’s nametag. For nomenclature details, refer to *H1 Axial Piston Pumps Technical Information 520L0823*.

T Module - Filtration Options Using the Filter Bypass Sensor

Option	Description
M	Integral full flow with filter bypass sensor

Description/ Theory of Operation

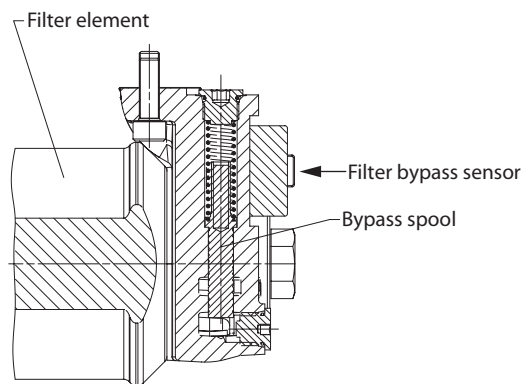
The H1 integral pressure filter head is designed with a filter bypass valve and non-contacting bypass sensor. The pressure differential acting on the filter element also acts on a spring biased bypass spool. This spool is designed with a magnetic area. When a certain spool position is reached, the magnet closes a switch in the bypass sensor which allows R2 to be in parallel with R1. This occurs without any mechanical contact between the spool and the bypass sensor.

The position of the bypass spool is indicated by the change in the measured sensor resistance. The change in resistance occurs when R2 is switched in and out of the circuit. When the filter is not being bypassed, the nominal measured resistance is 510 ohms. When the switch is closed, the nominal measured resistance is 122 ohms.

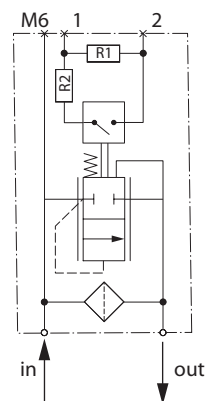
The bypass spool is designed so the bypass sensor switch will be closed before oil bypasses the filter element. This gives the machine operator an indication that the filter is very close to bypassing and a filter replacement is required.

For cold start conditions, it is typical that the filter may bypass for a short amount of time while the oil is warming up. At normal operating oil temperatures, a system that does not yet need a filter replacement will operate in the non-bypass mode. The addition of an oil temperature sensor and additional control logic, is recommended to properly determine if a filter replacement is required.

Integral Filter Head with Filter Bypass Sensor



Filter Head with Filter Bypass Sensor



Electrical Specifications

H1 Filter Bypass Sensor Electrical Specifications

Maximum voltage (V)	48 Vdc
Maximum power (W)	0.6 W
Nominal resistance across pin 1 and 2 of open switch	510 Ω
Nominal resistance across pin 1 and 2 of closed switch	122 Ω
Temperature range	-20° C to 100° C [-4° F to 212° F]

H1 Filter Bypass Sensor

Product Electrical Installation Tech Note

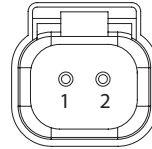
Electrical Installation

Pinout

Pinout

Pin	Description
1	Voltage
2	Ground

Pin location



Alternative Pinout

Pin	Description
1	Ground
2	Voltage

For device electrical schematic, see *Filter Head with Filter Bypass Sensor*, page 5.

Pin Compatibility

PLUS+1™ Module Pin Type/ H1 Filter Bypass Sensor Pin Compatibility

PLUS+1 Module Pin Type	Acceptable Use: Device Pin Number
AIN/Temp/Rheo	1, 2
Power ground -	1, 2

Mating Connector

H1 Filter Bypass Sensor Mating Connector Parts List

Description	Quantity	Ordering Number
Connector	1	Deutsch® DTM06-2S
Secondary wedge lock	1	Deutsch WM-2S
Socket terminal	2	Deutsch 0462-201-20141



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