

HONSBERG

Member of GHM GROUP

2-in-1 measuring process in hydraulic systems



FW4V standard version
in brass housing



BENEFITS.

- replaces elaborate hydraulic rectifier circuits
- one sensor for two flow directions
- viscosity stabilization

FW4V – one sensor, two flow directions

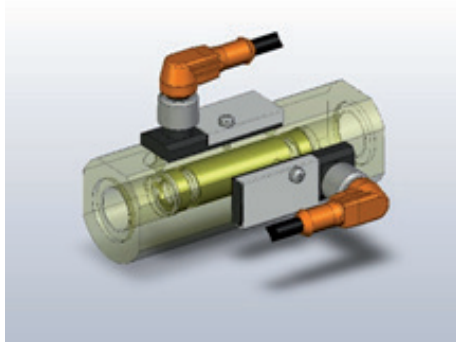
The requirements placed on us

Hydraulic systems are used in many various sectors today. This includes hydraulic drives for construction machinery, hydraulic cylinders for lifting heavy loads and hydraulically operated control units for use of individual components of a machine.

Hydraulic systems are also used in agricultural machinery, particularly in reversible ploughs. High pressure differences arise in these systems, so two separate sensors are often used in order to monitor the viscous medium in two flow directions. These so-called rectifier circuits are complicated to install and maintain.

Our solution

The Center of Competence Honsberg of GHM GROUP has developed a flow monitor based on the FW4V series that monitors flow in two directions. Instead of the elaborate installation of two sensors for each flow direction, the FW4V sensor is a bidirectionally-operating piston flow monitor with in-line arrangement. The mechanical measuring devices are customized to the applications: A switching head for each direction of flow is installed on a housing made of chemically nickel-plated brass. A reed contact acts as the producer of the signal. A spring-loaded piston, which is armed with magnets,



3D view of the FW4V with viscosity stabilization and shielding plate



FW4V for agricultural applications such as reversible ploughs

is located in the flow chamber. It drives the reed switch in a contactless manner. The piston displacement is dependent on the flow volume, whereby the force works against the flow resistance. The magnet-carrying piston experiences a displacement due to the flow. When this magnetic field reaches the reed contact of the switch head, it sends a switch signal until the piston is moved by the flow of the fluid. When the piston returns to its rest position, the signal goes out. The flow monitor functions in the same way in the other direction of flow.

The environmental conditions of the in-line measuring devices pose a series of demands on the accuracy of their measurement and switching. Therefore, a high operating pressure, temperature variations, the mounting position in and on the machines themselves, as well as a rough environment can strongly influence the measured signal. As an example, the massive steel framework of a machine affects the (magnetically operating) reed contact or temperature variations affect the viscosity of the hydraulic fluid. An integrated viscosity stabilization and a shielding of the switching head provide stability of the switching point, including in the area of magnetic influences. The viscosity stabilization allows the use of the device up to a viscosity of 330 mm²/s.

Benefits

- precise and reliable flow monitoring
- one sensor for two flow directions
- switch signal on contact with medium
- exact measurements with integrated viscosity stabilization and shielding of the switching head
- applicable for a viscosity of up to 330 mm²/s

Focus on the customer – purchase decision

The GHM GROUP's FW4V series for hydraulic systems impresses with its compact functionality and simple commissioning, as well as the precise monitoring of the flow in two flow directions. Elaborate hydraulic rectifier circuits in reversible ploughs, etc. can be replaced with the bidirectional function of the FW4V. The available accessories and the specially developed models also offer the possibility of individual adaptation to the specific application and thus versatile application and solutions possibilities for your challenge.