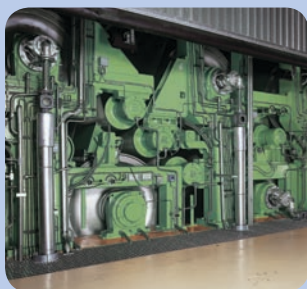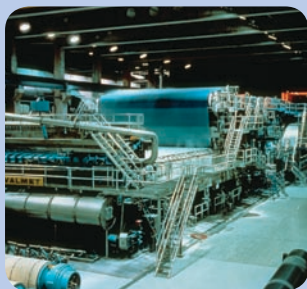# SKF Flowline monitor

New dimension of oil circulation flow rate measuring

SKF Flowline monitor – a new dimensi

The SKF Flowline Monitor flow rate monitoring system introduces a new dimension for measuring and controlling oil circulation lubrication system flow rates. SKF Flowline flowmeters operate individually, can be programmed and adjusted separately. They can be connected to a centralized control system.

   SKF Flowline's user friendly visual design allows operators to see the flow rate status of each individual lubrication point from the SKF Flowline monitor.
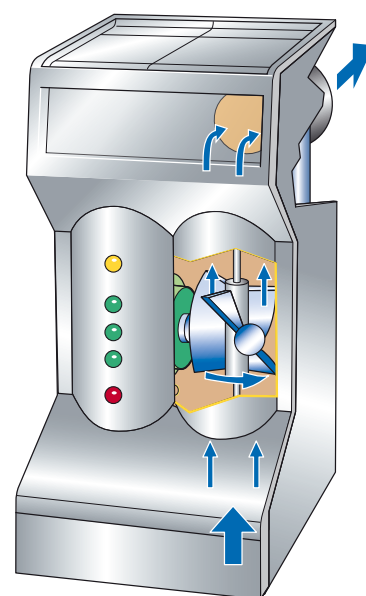
SKF Flowline monitor operation

SKF Flowline monitor ensures that the oil supply to the lubrication points is not disturbed or deviated excessively from the set limit values. Alarm limits and nominal flow can be set for each flowmeter individually. The flow rate is calculated by measuring the propeller rotation time by an inductive method and compensating the result by oil viscosity grade and oil temperature.

The user interface

The LED indicators in the flowmeters show a visual indication of oil flow volume. Any deviation from normal can be detected by the different LED indicator colors.

   Red indicates that the flow rate is below the low alarm limit value. Yellow indicates that the flow rate is above the high alarm limit value. When the green LED indicators are on, the flow rate is within tolerance – in other words, FLOWLINE! This makes it possible to control the system visually in the production facility during routine control checks without having to use or activate the flowmeters separately.

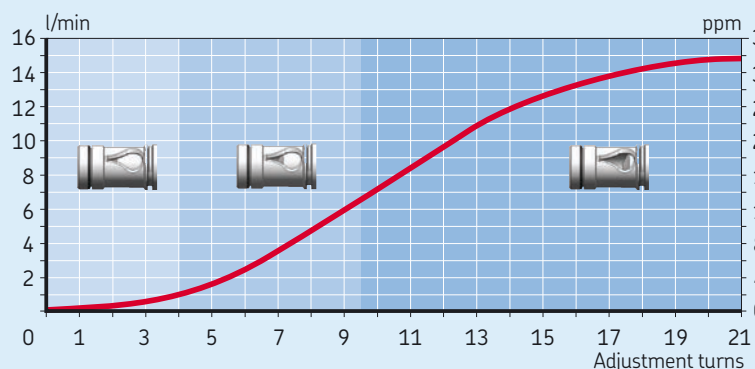   Flow rates and settings can be observed on the digital display and settings can be made by pushing keys.

SKF Flowline monitor

Control valve and wide adjusting range

A non-linear adjustable valve, together with a sensitive propeller, enables a large operation range in each flow tube and good accuracy also in low flow range.

Flow rates

Centralized control system

SKF Flowline monitors in the measuring system can be connected together by the CAN-bus to build a centralized control system. There are several alternatives for interfacing with PCs and DCS systems.

The Windows based SKF Flowline Software is the user interface for the centralized control system. The same version of the software is used with all interface alternatives. With SKF Flowline Software, the user can monitor and control the operation of the measuring system, display flow rates and alarms, and modify system settings like flow rate alarm limits of flowmeters. SKF Flowline Software can also be used as an OPC server.

SKF Flowline Software collects continuous flow rate data, oil temperature and alarm trends. The interface with DCS can be built using an OPC interface or SKF Flowline HUB and standard Modbus protocol or using alarm relays in HUB. By OPC or Modbus, the system can be monitored and controlled as with SKF Flowline Software.

For servicing and configuration of a single SKF Flowline monitor, a laptop PC can be temporarily connected by means of a RS232 connector

Flow alarms

A common alarm relay indicates high and low flow situations. The alarm output is a fail-safe type.

More versatile alarms can be obtained by plugging in an extra relay board including the following alternatives

• individual alarms from each lubrication point
• maximum 10 separate low and high level alarms
• zero flow alarm
• pre-alarms.

SKF Flowline monitor features

• Easy to use; practical and visual LED indicator system and clear digital display.
• Wide adjustment range.
• Electronic temperature measurement.
• Temperature compensated measuring results.
• Multimonitoring possibility.
• Modern design.

| SKF Flowline monitor technical specifications		
	FL15-XX	FL50
Flow rate range*	0,05–15,0 l/min 0,10–30,0 pints/min	10,0–50,0 l/min 20,0–100,0 pints/min
Number of flowmeters	2, 4, 6, 8, 10	1
Connections – input – output	R 1" (NPT 1 in.) R 1/2" (NPT 1/2 in.)	R 1" (NPT 1 in.) R 1" (NPT 1 in.)
Power supply	24 V DC/AC	24 V DC/AC
Power consumption	5 W max	5 W max
Alarm relay	120 V/1 A max, extra relay board available with 11 relays	120 V/1 A max, extra relay board available with 11 relays
Serial bus	CAN	CAN
Maximum operating temperature	70 °C (158 °F)	70 °C (158 °F)

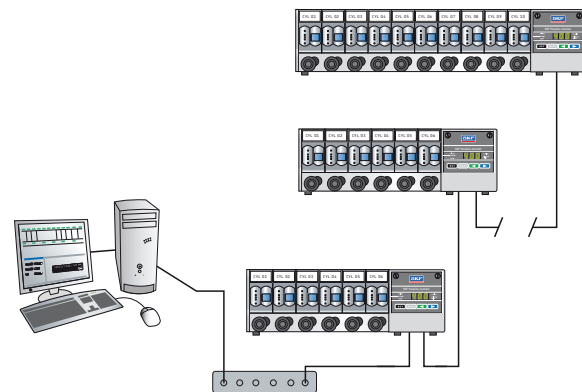*220 cSt (1000 SUS) max dP = 1,0 bar (14,5 Psi)

SKF Flowline Software main view
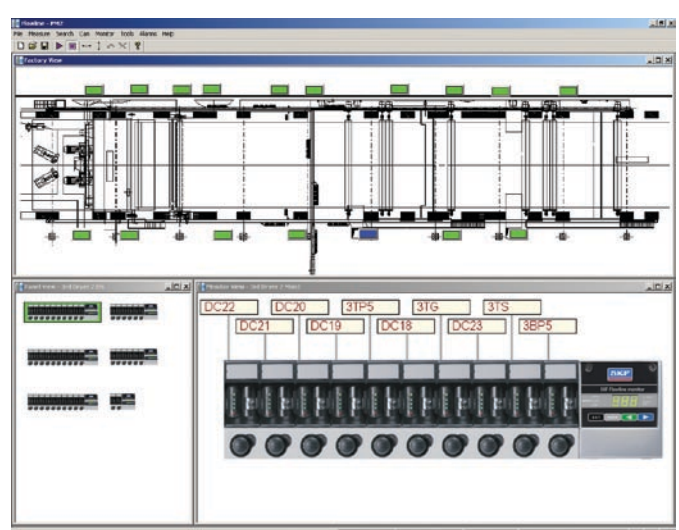
Alternative 1

Control by SKF Flowline HUB (RS232 HUB)

RS 485

CAN

RS 232

DCS
- Alarms
- Modbus
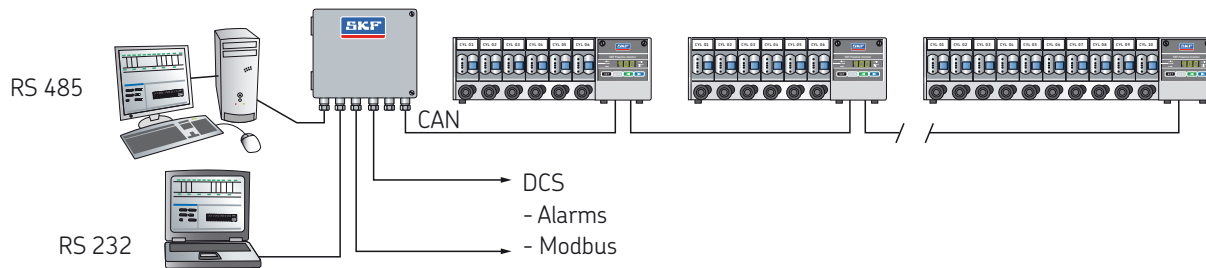
Alternative 2

Control by PC without HUB (USB–CAN)

SKF Flowline Hub

Power supply	230 VAC or 115 VAC
Monitor bus interface	
Protocol	CAN
Data transfer distance	1000 m (3 280 ft.)
Max. number of groups	100 pcs
Serial bus interfaces	RS485-PC
	RS485-Modbus
	RS232-PC

Alternative 3

Control by multiple PC over ethernet (Ethernet–CAN)

Master
(measure and
update)

Slave
(measure only)

Slave
(measure only)
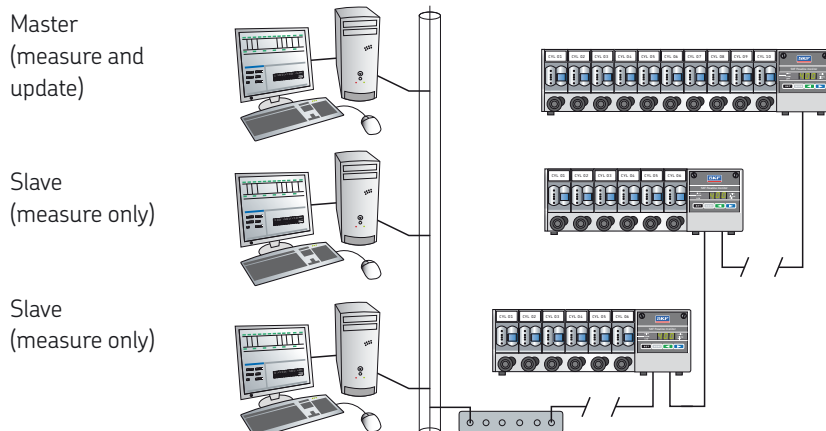
Alternative 4

Local connection to one SKF Flowline monitor

Wall bracets   Legs   Hood mounting
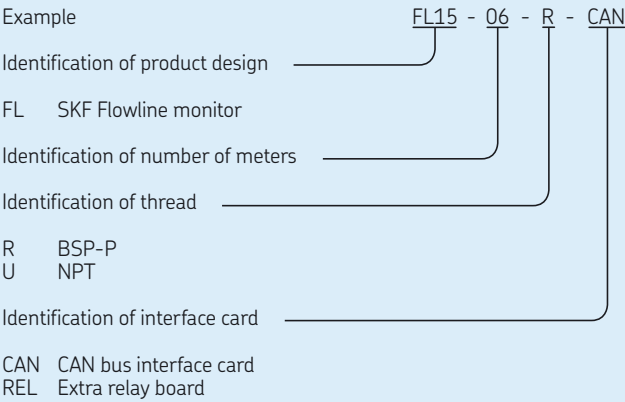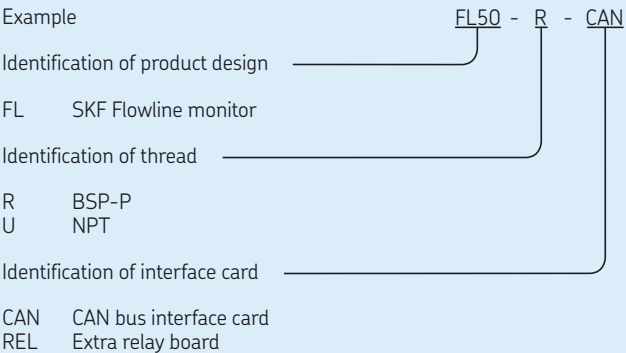
Supply piping assemply
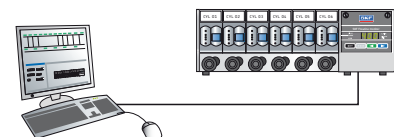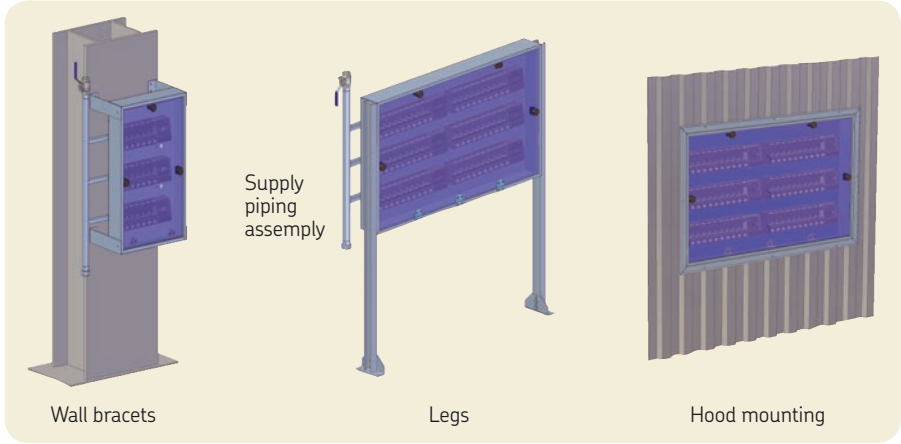
SKF Flowline monitor panels

- Easy and flexible installation with optional legs, wall brackets or hood mounting frame.
- Many standard sizes for up to 60 lubrication points.
- Plexiglass door protects the flowmeters.
- Options: Supply piping assembly, door with hinges, lock and light.

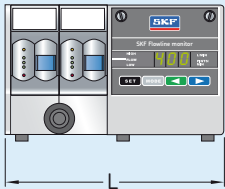## Designation system for SKF Flowline monitor FL15

Example   FL15 - 06 - R - CAN

Identification of product design

FL   SKF Flowline monitor

Identification of number of meters

Identification of thread

R   BSP-P
U   NPT

Identification of interface card

CAN   CAN bus interface card
REL   Extra relay board

Designation system for SKF Flowline monitor FL50

Example   FL50 - R - CAN

Identification of product design

FL   SKF Flowline monitor

Identification of thread

R   BSP-P
U   NPT

Identification of interface card

CAN   CAN bus interface card
REL   Extra relay board

SKF Flowline monitor dimensions

FL50   FL15
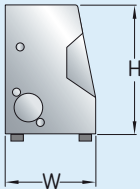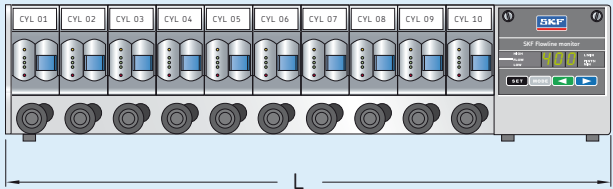
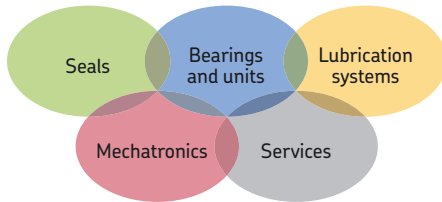| Designation	L		W		H	
	mm	in.	mm	in.	mm	in.
FL50	226	8,9	106	4,2	150	5,9
FL15-02	226	8,9	106	4,2	150	5,9
FL15-04	324	12,76	106	4,2	150	5,9
FL15-06	422	16,61	106	4,2	150	5,9
FL15-08	520	20,47	106	4,2	150	5,9
FL15-10	618	24,33	106	4,2	150	5,9

The Power of Knowledge Engineering

Drawing on five areas of competence and application-specific expertise amassed over 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide.

These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management systems.

A global presence provides SKF customers uniform quality standards and universal product availability.

SKF Lubrication Solutions

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skf.com