FAG

FAG Easy Check
FAG Easy Check Online

Technical Product Information

SCHAEFFLER GROUP
INDUSTRIAL

FAG EASY CHECK
FAG EASY CHECK ONLINE

The products in the Easy Check range are cost-effective vibration detectors for monitoring critical machinery. Incipient damage to bearings, shafts, gear sets or other machine parts generally becomes apparent through an increase in the vibration level and/or temperature. These changes are detected by Easy Check products using the built-in sensors and presented on an LED display. It is then possible to take appropriate measures at an early stage and prevent unplanned downtime. The use of Easy Check vibration detectors makes a significant contribution to increased efficiency and thus to reducing costs in production and maintenance.

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Areas of application

Easy Check can be used for monitoring in any industrial sector where equipment such as pumps, fans and electric motors is used. There is no need to install special software or perform time-consuming configuration work.

Configuration is carried out using the DIP switches on the circuit board. No specialist knowledge or intensive study of the user manual are required. The products are supplied preconfigured for most standard applications.

Easy Check/Easy Check Online can be used to monitor machine vibrations in accordance with ISO 10816 and the condition of rolling bearings using the proven envelope method. Temperature is also recorded at the measurement point. Through monitoring of these three parameters, incipient damage can be detected at an early stage.

The Easy Check is available in two different versions:

Easy Check:
battery-operated

Easy Check Online:
with an external power source and alarm outputs

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Easy Check

Easy Check is a standalone device, powered by a battery, that alerts maintenance personnel to a problem by means of LEDs. Thanks to this early warning, personnel can introduce timely measures in order to prevent continuing damage. To do this, the status of the LEDs on the Easy Check should be checked at regular intervals.

Easy Check Online

Easy Check Online requires an external power source and, in addition to the optical display, has the option of presenting machine conditions on a control station, for example, using 3 different outputs, eliminating the need for regular inspection tours and allowing continuous condition monitoring. This means that central monitoring can be applied to locations with poor access where visual inspection would require considerable expenditure of time.

Using the input, Easy Check Online can be remotely administered. Depending on the DIP switch configuration selected, the following options are available

- start the learning phase
- cancel the alarms
- activate a measurement cycle

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The principle

Easy Check was developed primarily for machinery running under constant operating conditions. As soon as the machinery reaches its normal operating condition, Easy Check/Easy Check Online is switched to the so-called learning phase. During this phase, the device measures the vibration level and temperature values and stores these as reference values. It must be ensured that the machinery to be monitored is in its normal operating condition when the reference values are determined, in order to avoid false alarms at a later stage. After a period of approx. 20 minutes, the learning phase is complete and automatic monitoring of the machinery is started.

Vibration signals are measured by means of the integrated acceleration sensor. The device uses these to calculate effective values for general vibration condition and rolling bearing condition acceleration, as well as determining the temperature by means of the integral sensor, and compares these data with the stored reference values.

Parameterising is carried out via the DIP switches on the circuit board. For example, the following parameters can be configured:

1. alarm thresholds for temperature
2. alarm thresholds for vibration rate
3. alarm thresholds for vibration acceleration

The device then triggers an alarm if the stored alarm thresholds are continuously exceeded over a five minute period. Using the various LED alarm codes, the machine problem can be narrowed down.

Advantages

The use of these two EC devices does not require any prior knowledge of Condition Monitoring or costly training measures. Furthermore, both products are characterised by an excellent cost/benefit ratio. They are a comparatively economical aid to detecting incipient damage at an early stage and planning the necessary maintenance work. These contribute to increased plant efficiency.

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Very easy to use

1. Fit to a suitable machine
2. Ensure the necessary power source
3. Make any adjustments to the configuration (DIP switches) for the specific customer
4. Start the learning phase
5. Check the status regularly
6. If an alarm occurs, carry out detailed diagnosis and adjust the alarm values if necessary

Features

- Compact dimensions
- Simple configuration via DIP switches
- Working range, depending on version, max. –20 °C to +85 °C
- Comparison of measured values with stored reference values
- Monitoring functions
  – General vibration condition
  – Rolling bearing condition
  – Temperature monitoring
- Status display on three LEDs
- External alarm display (“traffic lights”, machine controller, control station, etc.)

Ordering designation and scope of delivery

FIS.EASYCHECK.V1
Scope of delivery:
- Easy Check
- AA battery
- Adapter G⅛
- User manual (multilingual)

FIS.EASYCHECK.ONLINE.SET
Scope of delivery:
- Easy Check Online
- Connection plug and 10m connection cable (bare ends)
- Adapter G⅛
- User manual (multilingual)

Accessories:
- Adapter G¼, M10, ⅛ NPT, ¼ NPT and adhesive adapter
- Adapter for connection to FAG automatic lubricators

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Technical data

DIP switches – setting and blink codes
(default settings are highlighted)
Easy Check

S1, S2: Setting for bearing monitoring

S1	S2	f_{HP}	Machine class
OFF	OFF	20 Hz	Special applications
OFF	ON	-------	
ON	OFF	-------	
ON	ON	500 Hz	Standard > 300 rpm

S3, S4: Alarm thresholds for vibration

S3	S4	Prealarm	Main alarm	Example applications
ON	ON	140 %	200 %	Mills
OFF	ON	200 %	280 %	Pumps
ON	OFF	280 %	400 %	Fans
OFF	OFF	400 %	560 %	Large electric motors

S5, S6: Alarm thresholds for temperature

S5	S6	Prealarm	Main alarm
ON	ON	T_{REF} +5 K	T_{REF} +10 K
OFF	ON	T_{REF} +15 K	T_{REF} +20 K
ON	OFF	T_{REF} +25 K	T_{REF} +30 K
OFF	OFF	T_{REF} +35 K	T_{REF} +40 K

Blink codes for LEDs

None	Change battery
Red, **yellow**, **green**	Start learning phase
Green, **yellow**	Learning phase
Green	Measurement without alarm
Yellow	Measurement with initial alarm
Red, **yellow**	Alarm for vibration measurement
Red, **green**	Alarm for temperature
3 × yellow	No reference measurement stored
2 × yellow	Battery too weak
Red	Defect – contact Support

DIP switches – setting and blink codes

Easy Check Online

S1.1, S1.2: Setting for bearing monitoring

S1.1	S1.2	f_{HP}	Machine class
OFF	OFF	20 Hz	Special applications
OFF	ON	-------	
ON	OFF	-------	
ON	ON	500 Hz	Standard > 100 rpm

S1.3, S1.4: Alarm thresholds for temperature

S1.3	S1.4	Prealarm	Main alarm
ON	ON	T_{REF} +5 K	T_{REF} +10 K
OFF	ON	T_{REF} +15 K	T_{REF} +20 K
ON	OFF	T_{REF} +25 K	T_{REF} +30 K
OFF	OFF	T_{REF} +35 K	T_{REF} +40 K

S1.5 Only active in configuration mode

S1.6 Configuration mode for outputs and input

ON	Start configuration mode
OFF	End configuration mode

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In configuration mode, switches S1.3 to S1.5 can be used to set the following parameters. The values set are stored by pressing the button on the instrument.

S1.3 Output functions

OFF	Inverted
ON	Not inverted

S1.4 Alarm configuration for outputs

OFF	Prealarm – all functions/ Main alarm – vibration and temperature
ON	Main alarm – acceleration, rate and temperature

S1.5 Function of control input

ON	Alarm reset/learning phase
OFF	Activate a measurement

S2.1, S2.2: Alarm thresholds for rolling bearing condition

S 2.1	S 2.2	Prealarm	Main alarm	Example applications
ON	ON	140 %	200 %	Mills
OFF	ON	200 %	280 %	Pumps
ON	OFF	280 %	400 %	Fans
OFF	OFF	400 %	560 %	Large electric motors

S2.3, S2.4:Alarm thresholds for general vibration condition

S 2.3	S 2.4	Prealarm	Main alarm	Example applications
ON	ON	140 %	200 %	Mills
OFF	ON	200 %	280 %	Pumps
ON	OFF	280 %	400 %	Fans
OFF	OFF	400 %	560 %	Large electric motors

Blink codes for LEDs

Red, **yellow**, **green**	Start learning phase
Green, **yellow**	Learning phase
3 × **yellow** (every 4 s)	No reference measurement stored
2 × **red** (every 4 s) or **3 ×** **red**	Malfunction - contact Support

LEDs on Easy Check Online

Instrument condition	Green	Yellow	Red
Measurement	**On**	Off	Off
Prealarm	Off	**On**	Off
Main alarm – vibration acceleration	Off	Off	**Blink**
Main alarm – vibration rate	Off	**Blink**	**On**
Main alarm – temperature	**Blink**	Off	**On**
Main alarm – vibration acceleration, main alarm – vibration rate	Off	**Blink**	**Blink**
Main alarm – vibration acceleration, main alarm – temperature	**Blink**	Off	**Blink**
Main alarm – vibration rate, main alarm – temperature	**Blink**	**Blink**	**On**
Main alarm – vibration rate, main alarm – vibration acceleration, main alarm – temperature	**Blink**	**Blink**	**Blink**

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Type	FAG Easy Check/Easy Check Online
Measurement range:	±25 g
Measurement values:	Velocity (2 Hz to 1 kHz) Envelope of vibration acceleration HP: 20 Hz/ 500 Hz (switchable), TP: 5 kHz
Alarm system:	3 status LEDs (red, yellow, green)
Ambient temperature:	EC –20 °C to +55 °C (up to +70 °C with special battery) EC Online –20 °C to +85 °C
Power source:	EC 1,5 V battery, size AA EC Online 10 V–30 V DC or 10 V–24 V AC
Alarm outputs EC Online:	EC Online has three switch outputs with electroplated separation (open collector 85 V DC/130 mA). Depending on the configuration of the corresponding DIP switch, different signals are present on the outputs
Maximum power consumption:	2,2 W
Input EC Online:	EC Online has one input (depending on configuration, Alarm reset/Start learning phase/ Start measurement) 0–3 V input is set to inactive 5–30 V input is set to active
Housing:	Material “Makrolon”
Protection:	IP65 (dust tight, spray water tight)
Fixing:	M8 internal thread with bushing
Connection:	M8 external thread with bushing
Dimensions:	ø 90 mm (3,54″) × height 76 mm (3″)
Mass:	260 g

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