



USER INSTRUCTIONS

DataUSB

Trend data memory for Detect

65011899 1-21-E

Original Instructions

**Installation
Operation
Maintenance**

 **These instructions must be read prior to installing, operating, and maintaining this equipment.**





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1 General Information

1.1 Scope of manual



These instructions must be kept close to the product's operating location or directly with the product.



These instructions must be read prior to installing, operating, using, or maintaining the equipment in any region worldwide. The equipment must not be put into service until all of the safe operating conditions noted in the instructions have been met. Failure to comply with the information provided in the User Instructions is considered to be misuse. Personal injury, product damage, delay in operation, or product failure caused by misuse are not covered by the Flowserve warranty.

Flowserve products are designed, developed and manufactured with state-of-the-art technologies in modern facilities. The unit is produced with great care and commitment to continuous quality control, utilizing sophisticated quality techniques, and safety requirements.

Flowserve is committed to continuous quality improvement and being at your service for any further information about the product in its installation and operation or about its support products, repair and diagnostic services.



These instructions are intended to familiarize the reader with the product and its permitted use. Operating the product in compliance with these instruction is important to help ensure reliability in service and avoid risks. These instructions may not take into account all local regulations; ensure such regulations are observed by all, including those installing the product. Always coordinate repair activities with operations personnel, and follow all plant safety requirements and applicable safety and health legislation.

1.2 Disclaimer

Information in this User Instruction is believed to be complete and reliable. In spite of all Flowserve's efforts to provide comprehensive information and instructions, sound engineering and safety practices should always be used. Please consult with a qualified engineer.

Flowserve manufactures products to applicable International Quality Management System Standards as certified and audited by external Quality Assurance organizations. Genuine parts and accessories have been designed, tested, and incorporated into the products to help ensure continued product quality and performance in use. As Flowserve cannot test parts and accessories sourced from other vendors the incorrect incorporation of such parts and accessories may adversely affect the performance and safety features of the product. The failure to properly select, install, or use authorized Flowserve parts and accessories is considered to be misuse. Damage or failure caused by misuse is not covered by Flowserve's warranty. In addition, any modification of Flowserve products or removal of original components may impair the safety of these products in use.

1.3 Certification instruction

It is a legal requirement that machinery and equipment put into service within certain regions of the world shall conform to the Marking Directives applicable to Flowserve products (i.e. Machinery Directive, Low Voltage Directive, Electromagnetic Compatibility (EMC) Directive, Pressure Equipment Directive (PED), Equipment for Potentially Explosive Atmospheres (ATEX), etc.).

Note: Certificates defined in the Contract requirements are provided with these instructions where applicable. Examples of the certificates can be found in the Annex of this document. If required, copies of other certificates sent separately to the Purchaser should be obtained from the Purchaser for retention with this User Instruction.

2 Safety Information

2.1 Safety symbols and description

This User Instruction contains specific safety markings where non-observance of an instruction would cause a hazard. The specific safety markings are:

Table 1: Definition of safety symbols and markings










Symbol	Description
	DANGER This symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury
	WARNING This symbol indicates a hazardous situation which, if not avoided, could result in death or serious injury
	CAUTION This symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury
	Safety Instruction This symbol indicates specific safety-related instruction or procedures
	NOTICE This symbol is used to address practices not related to physical injury
	This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

Table 2: Additional symbols

Symbol	Description
	ELECTRICAL HAZARD This symbol indicates electrical safety instructions where non-compliance would affect personal safety and could result in loss of life
	TOXIC HAZARD This symbol indicates “hazardous substances and toxic fluid” safety instructions where non-compliance would affect personal safety and would damage the equipment or property
	ATEX EXPLOSION PROTECTION This symbol indicates explosive atmosphere marking according to ATEX. It is used in safety instructions where non-compliance in the hazardous area would cause the risk of an explosion

2.2 Qualified personnel and targeted group

All personnel involved in the operation, installation and maintenance of the unit must be qualified to carry out the work involved. If the personnel in question does not already possess the necessary knowledge and skill, appropriate training and instruction must be provided. If required the operator may commission the manufacturer / supplier to provide applicable training.

Always co-ordinate repair activities with operation and health and safety personnel, and follow all plant safety requirements and applicable safety and health laws and regulations.

2.3 Potential explosive areas



Measures are required to:

- Avoid excess temperature
- Prevent build-up of explosive mixtures
- Prevent the generation of sparks
- Prevent leakages
- Maintain the pump to avoid hazard

All instructions for equipment installed in potentially explosive atmospheres must be followed to help ensure explosion protection. For ATEX, both electrical and non-electrical equipment must meet the requirements of the European Explosion Protection Directive 2014/34/EU. Always observe the regional legal Ex requirements, e.g. Ex electrical items outside the EU may be required certified to other than ATEX e.g. IECEx, UL.



Use equipment only in the zone for which it is appropriate. Always check that all equipment is suitably rated and/or certified for the classification of the specific atmosphere in which they are to be installed.

3 Product Description

3.1 General product description

DataUSB Trend data memory is the ideal solution to store the vibration data, which were taken by the Detect sensor, and serves as an uncomplicated communication interface for the vibration analysis. The data can be logged to a USB flash drive for a period of up to 3 years at permanent measurement.

These condition data can be analyzed professionally by use of the Vibrosoft software, the current condition of the machine can be evaluated and hence, further actions can be initiated at an early stage.

3.2 Connections

3.2.1 Electrical connections

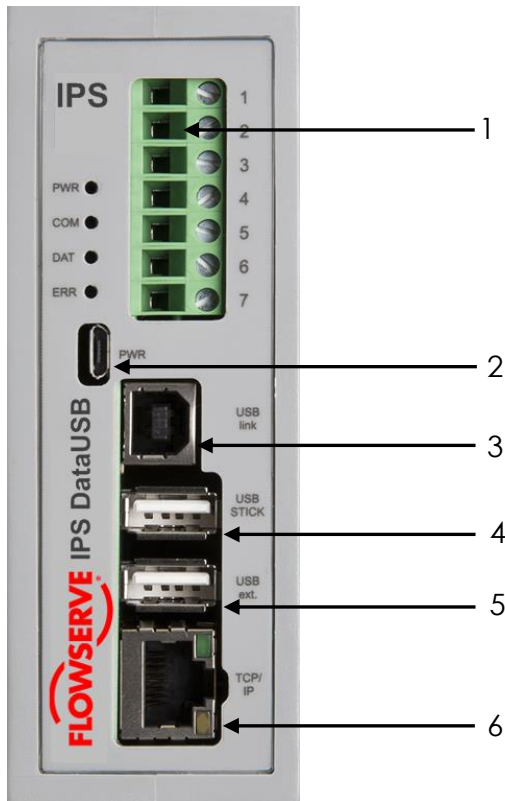


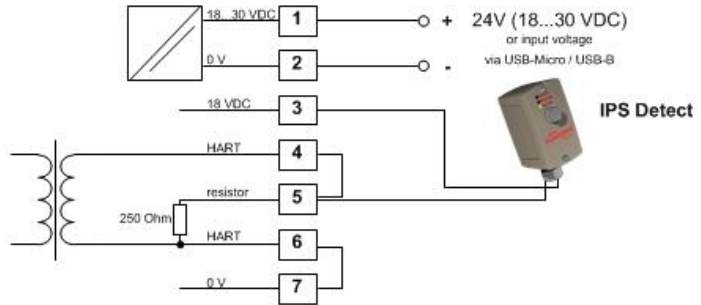
Figure 1: Electrical connections of IPS DataUSB

- 1 Terminal block for connection of the Detect sensor
- 2 USB-Micro for optional power supply
- 3 USB-B communication port for Vibrosoft software and optional power supply
- 4 USB-A Flash drive
- 5 Additional USB-A port
- 6 TCP/IP Web browser

IPS Detect

Input voltage with internal resistor

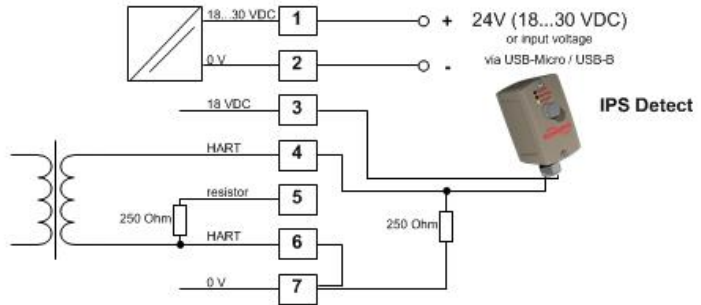
Terminal block IPS DataUSB



IPS Detect

Input voltage with external resistor

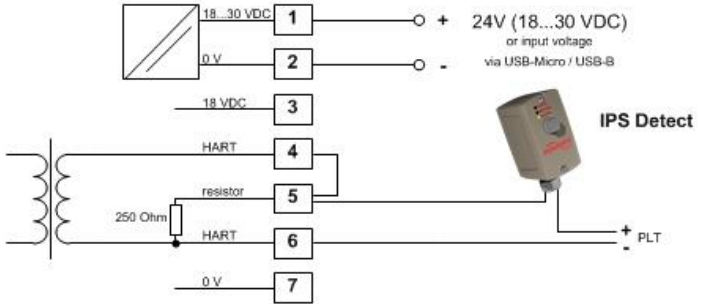
Terminal block IPS DataUSB



IPS Detect

Process control connection with internal resistor

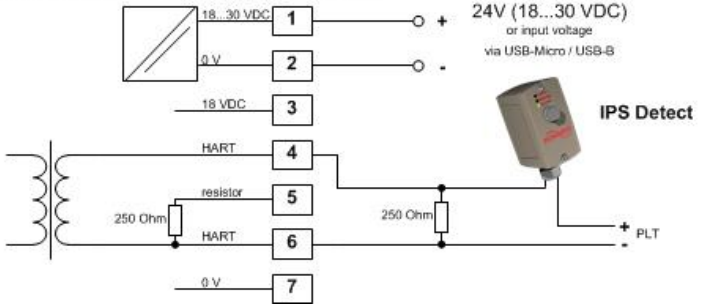
Terminal block IPS DataUSB



IPS Detect

Process control connection with external resistor

Terminal block IPS DataUSB



3.3 Controls

The DataUSB has 4 LED indicator lights to signify various states. See table below for description of each state

Table 3: LED indicator lights, state and description

TLED	State	Description
PWR	Green	Power supply is ON
COM	Flashes in green	Data communication occurs between Detect sensor and Data USB
DAT	Flashes in green	The data is being copied to USB stick
ERR	Red	Electronic error No USB stick is connected

3.4 Operating software

The IPS version 4.1 is the operating software.

4 Packaging, Transportation and Storage

4.1 Consignment receipt

Immediately after receipt of the product/system it must be checked against the delivery/shipping documents for its completeness and that there has been no damage in transportation. Any shortage and/or damage must be reported immediately to Flowserve and must be received in writing within one month of receipt of the equipment. Later claims cannot be accepted.

4.2 Unpacking

After unpacking, protection will be the responsibility of the user.

4.3 Packaging

Normal packaging is designed to protect the unit and parts during shipment and for dry, indoor storage.

5 Operation

5.1 DataUSB

The DataUSB trend data memory is ready for operation, after the connection of the Detect sensor. Every 30 seconds a complete data set of the sensor is stored on the USB-Stick. Start time (factory setting) is 01.01.2012 12:00 o'clock. The date and the time can be changed with the Vibrosoft software version 30 and later. If the power supply is switched off the real time is stored up to five days. Further settings for DataUSB trend data memory and Detect can be changed with the Vibrosoft software. Please, use also the *operation manual of the Vibrosoft software for further information.*

The data are stored continuously on the USB-Stick. When reaching the maximum file size the file index is incremented and a new file is created. If all files are used on the USB-Stick, then according the ring memory principle the first file will be deleted, so that automatically always the last period is available as a trend.

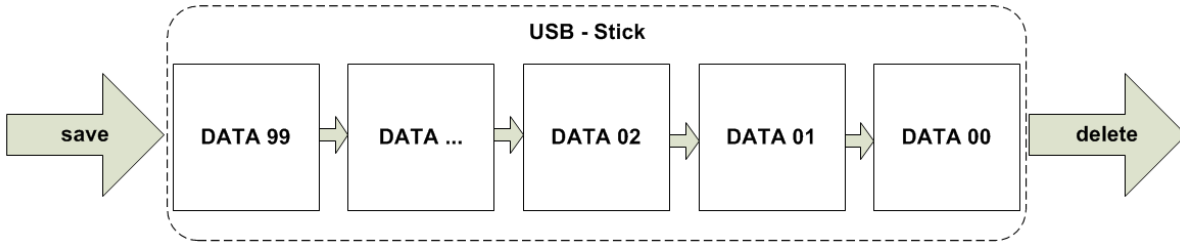


Figure 2: Flow chart on data movement on USB-Stick

For easy data identification the file name includes the serial number of the sensor and the data-index. This file name cannot be changed.

e.g.: with factory setting file size 4500 KB and continuous measurement

- 01621_00.TXT 4500 kB
- 01621_01.TXT 4500 kB
- 01621_02.TXT 4500 kB
- ...
- 01621_99.TXT

data-index 0-99

IPS Detect serial number

5.2 Vibrosoft

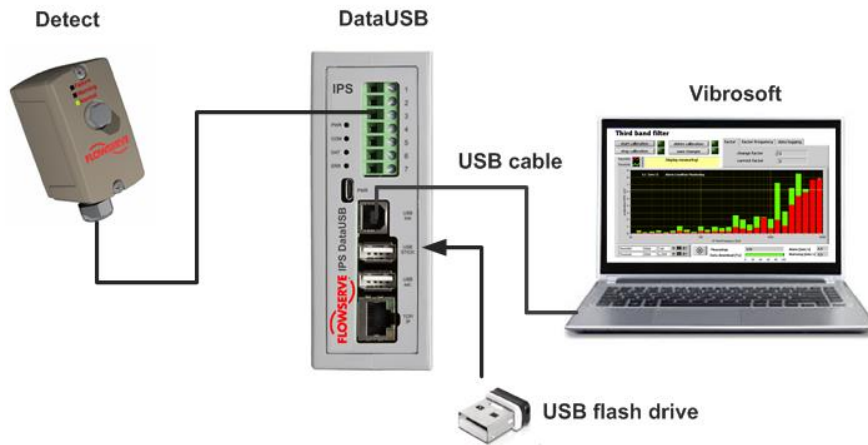


Figure 3: Connections to DataUSB

For the USB-communication a USB-Serial-Port-COM driver has to be installed. The driver CDM20824_Setup.exe can be installed from the „Vibrosoft – CD” or found using the following URL “<http://www.ftdichip.com/Drivers/VCP.htm>”.

Installation guide

- 1.Start the IPS_DataUSB_COM.exe
- 2.Follow the installation notes from your PC
- 3.Connect the USB-A / USB-B cable with the PC and DataUSB

4. Consider the COM number from your PC or check system control / device manager/ connections (COM&LPT) on your PC,,USB Serial Port (COM xx)
5. Install and start the Vibrosoft Vers.34.

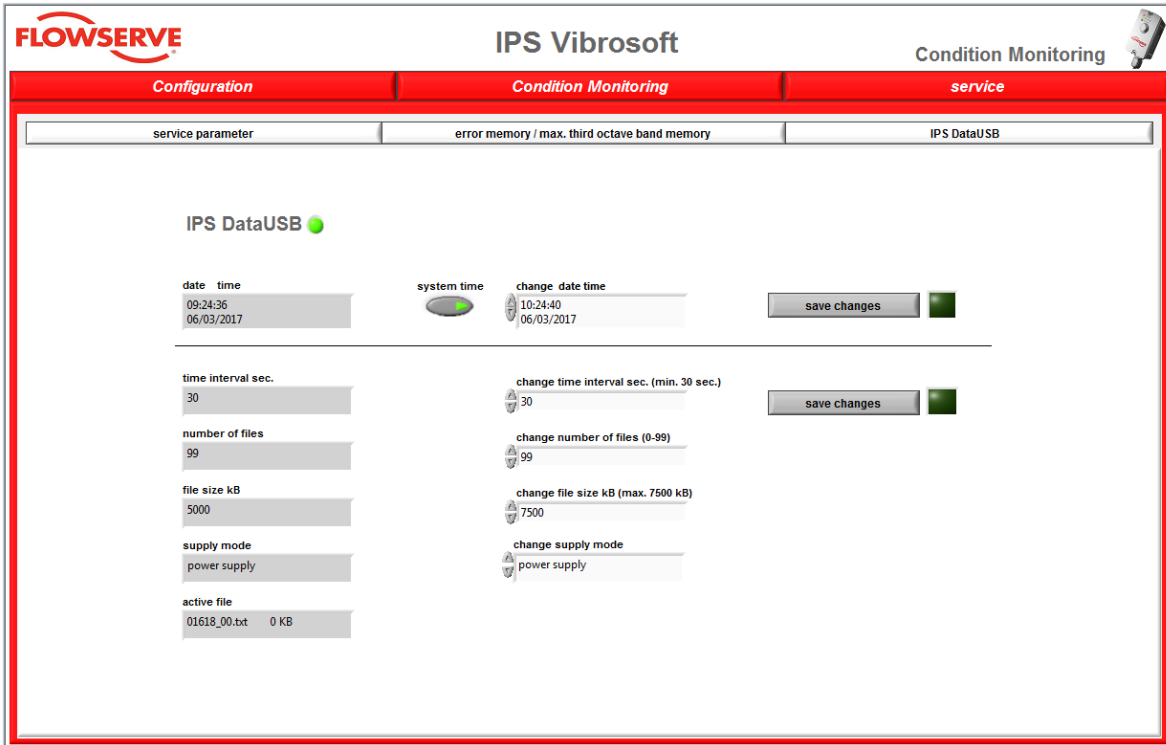


Figure 4: DataUSB page in Vibrosoft

5.3 Trend data analysis

The data on the USB-Stick are stored in the CSV format as a TXT-file and can be analysed with Excel or with the Vibrosoft – DataViewer. Further information about the Vibrosoft - DataViewer are in the operating instructions of the Vibrosoft software.

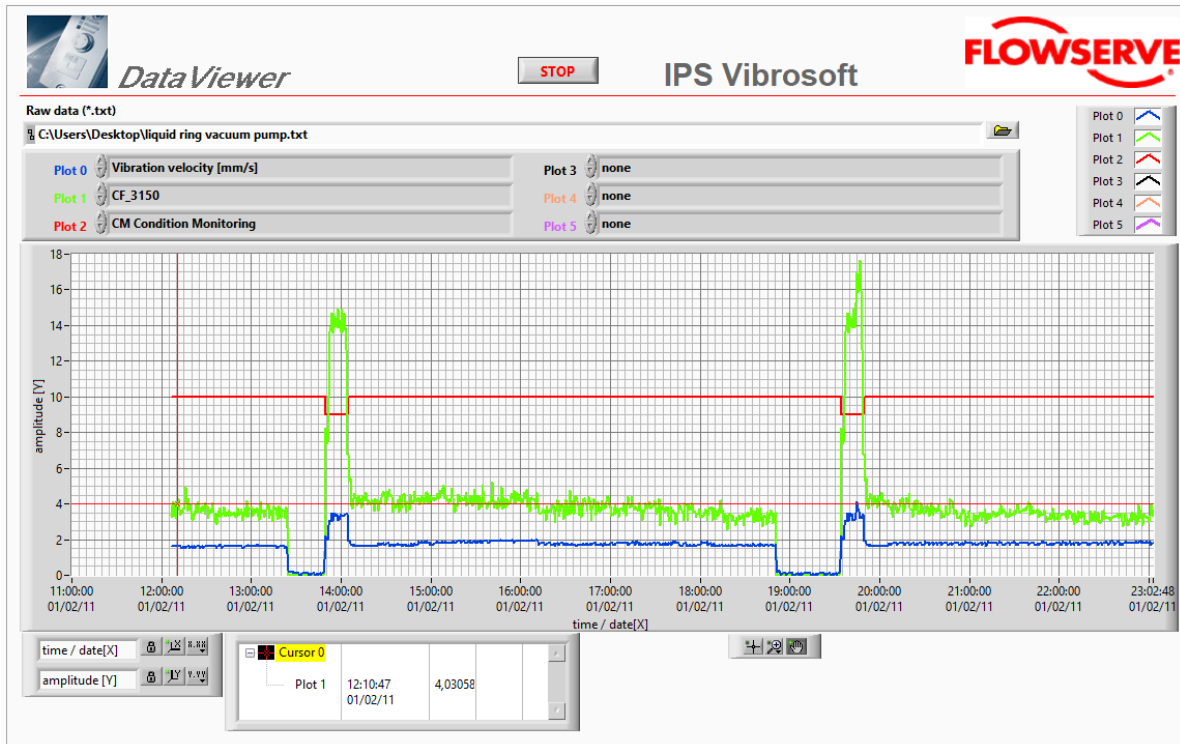


Figure 5: Vibrosoft – DataViewer

Table 4: Logged data

Description	Example
Date	25.07.2007
Time	11:17
Vibration Velocity mm/s	2,2
Temp. °C [sensor temperature]	22,4
CM [Condition Monitoring] 12 unacceptable vibration velocity 11 increased vibration velocity 10 normal operation 9 unacceptable operation mode	10
HF_1-5kHz m/s ² [RMS frequency band 1 to 5kHz]	1,2
CF_13 m/s ² CF_16 m/s ² CF_20 m/s ² ... CF_5000 m/s ² [RMS Third-octave band (see below: schedule line Third-octave band)]	0,024 0,031 0,028 ... 2,2

Table 5 : Schedule line Third-octave band

lower cut-off frequency	centre- frequency CF	upper cut-off frequency
[Hz]	[Hz]	[Hz]
11	12.5	14
14	16	18
18	20	22
22	25	28
28	31.5	35
35	40	44
44	50	56
56	63	70
70	80	88
88	100	110
110	125	140
140	160	180
180	200	220
220	250	280
280	315	350
350	400	440
440	500	560
560	630	700
700	800	880
880	1000	1100
1100	1250	1400
1400	1600	1800
1800	2000	2200
2200	2500	2800
2800	3150	3500
3500	4000	4400
4400	5000	5600

6 Troubleshooting Guide

Table 6: Troubleshooting recommendations

Scenario	Causes	Remedies
PWR LED does not illuminate	Power supply via terminal is blocked <ul style="list-style-type: none"> • polarity of the power supply • voltage level [24Volt (18 - 30 VDC)] 	Check the connection of the power supply
	Optional power supply via USB <ul style="list-style-type: none"> • USB power unit [5VDC ≥ 500 mA] • USB cable too long. Thereby voltages drop 	Check the connection of the USB power supply
COM LED does not illuminate	Communication error	Check the connection of Detect
DAT LED does not illuminate	No USB flash drive is connected	Connect the USB flash drive
	Communication error, see also COM	Check the connection of Detect
	USB-Flash drive storage is full	Replace or delete USB flash drive
	USB flash drive is damaged	Replace the USB flash drive
ERR LED flashes in red	Electronic error	Replace DataUSB device
	USB flash drive is not connected	Connect the correct USB flash drive

7 Technical Data

7.1 Equipment dimensions and weights

Table 7: Housing details

Dimensions	118 x 45 x 138 mm
Weight	200 g
Mounting	32 mm mounting rail EN 60715

7.2 Electrical Data

Table 8: Electrical data

Input voltage	VDC (18...30 VDC); 500 mA *1; terminal 1+ / 2 Power supply for electronic devices class A (industrial operation)
Alternative input voltage 1	USB-Micro power supply unit 5 VDC / 500mA *2
Alternative input voltage 2	USB-B for PC communication 5 VDC / 500 mA *2
Detect - output voltage	18 VDC \pm 5% / 20 mA short-circuit-proof; terminal 4+ / 7
Internal resistance	250 Ohm ; terminal 4 / 6

*1 - By use of the provided USB-Sticks. Other USB-Sticks can have a higher power consumption.

*2 - The provided USB-Stick or a USB-Sticks with a power consumption <200 mA have to be used.

7.3 Ambient conditions

Table 9: Ambient conditions

Storage temperature	Ta = -20 ... 60 °C
Ambient temperature	Ta = -20 ... 60 °C
Life-time	>50.000 h
Protection degree	IP20
Relative air humidity	5...95% no condensation
EMC requirements	IEC 61326

7.4 Trend data memory

Table 10: Trend data memory

Storage type	Ring buffer
USB-Stick	\geq 1 GB (Scope of supply includes 4 GB)
Number of files	0 – 99 (Factory setting 99)
File size	100 – 7500 kB (Factory setting 4500 kB)
Log - interval	min. 30 seconds (Factory setting 30 sec.)
Measurement	~ 0,26 kB per measurement
Data format	TXT in CVS format for e.g. Excel or Vibrosoft - DataViewer
Configuration	Vibrosoft

7.5 Real time clock

Table 11: Real time clock

Factory setting	01.01.2012 12:00 o'clock
Configuration	Vibrosoft
Operation real time clock without power supply	>5 days

Annex A: Declaration of Conformity

If the product/system is being sold into a country which requires a Declaration of Conformity (DoC), an example of each DoC for the subject product/system must be included in this Annex.

Below is an example of Declaration of Conformity for the product/system.



SIHI® Pumps



EU declaration of conformity

- Original -

The manufacturer:

Flowserve SIHI Germany GmbH
Lindenstraße 170
D-25524 Itzehoe

declares herewith that the product

System: IPS DataUSB

fulfils all relevant provisions of following EU directives:

- Restriction of hazardous substances 2011/65/EU
- Electromagnetic compatibility 2014/30/EU

Harmonised standards used:

EN 61326-1:2013

Other technical standards and specifications used:

EN 61010-1:2010

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Place, date:

Itzehoe, 01.01.2019

Person empowered to draw up this declaration:

General Manager


Peter Röper



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To find your local Flowserve representative use the Sales Support Locator System found at www.flowserve.com

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While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purpose only and should not be considered certified or as a guaranteed of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, regarding any matter with respect to the product. Because Flowserve is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice. Should any question arise concerning these provisions, the purchaser/user should contact Flowserve Corporation at any one of its worldwide operations or offices.

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