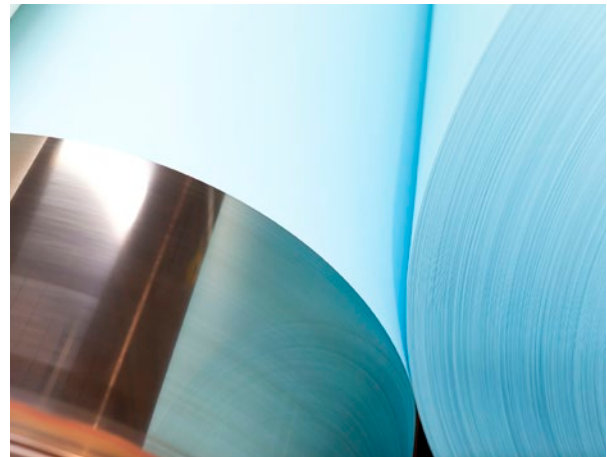


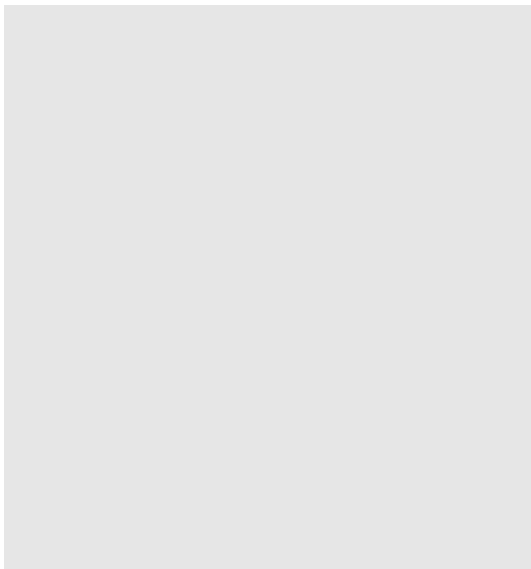
Speed Pressure Flow Rate Temperature

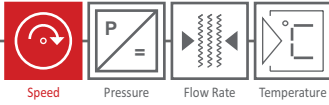
# FREQUENCY TRANSDUCER FMP 1836

for limit value monitoring or recognition of the direction of speed



Rev.-Nr.: FMP\_1836-DS\_109 E-V1.1.2018-02-01

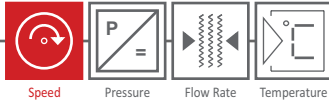




## Table of content

General description	3
FMP 1836-8008 for recognition of direction of speed (4-quadrant operation)	3
FMP 1836-8001 for limit value monitoring	3
Fields of Application	3
Technical details	4
FMP 18036-8008 for recognition of direction of speed	4
FMP 1836-8001 for limit value monitoring	5
Common technical details	5
Order information	7
FMP 1836	7
Optionale device functions and housing	7

Rev.-Nr.: FMP 1836-DS 109 E-V1.1 2018-02-01



## General description

The 2 Channel frequency transducer FMP 1836 displays all measurands which can be converted to the equivalent parameter frequency by applicable transmitters.

The FMP 1836 is designed either for recognition of direction of speed or limit value monitoring.

FMP 1836-8008 for recognition of direction of speed (4-quadrant operation)

The FMP 1836-8008 is designed for the recognition of speed of two signals, out of phase 90° (4-quadrant operation). The directions of CLOCKWISE and COUNTERCLOCKWISE are connected to the frequency input. The mA output can be used for the actual speed of the frequencies. The integrated relays show the status of the direction. Additionally one relay is available for limit value monitoring.



FMP 1836-8001 for limit value monitoring

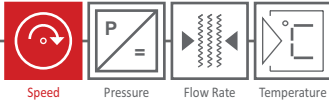
The FMP 1836-8001 has 2 frequency inputs and 7 relay output for limit value monitoring. The eighth relay shows the device status. Each limit value has a limiter which provides 5 operation modes:

- lower limit value („underrange“)
- upper limit value („overrange“)
- band limit value („Band“)
- notch limit value („Notch“)

Each limiter can be programmed with a trigger delay. For the lower and upper limit a hysteresis band can be defined.

## Fields of Application

- |   |  |                    |
|---|--|--------------------|
| ■ Actual value for analog speed control | ■ Paper, fibre, film, steel and crane industry | ■ Centrifuges      |
| ■ Test stands                           | ■ Textile machines                             | ■ Emergency diesel |
| ■ Turbines                              | ■ Generators                                   | ■ Agitators        |



## Technical details

The devices of the series FMP 1836 are available as 2 channel devices. In the following the technical details of the two different types are described.

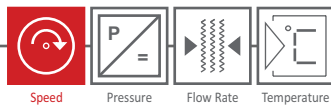
### FMP 18036-8008 for recognition of direction of speed

MEASURING INPUT		WITH SC 500
INPUT 1 (CHANNEL „A“)	frequency „A“ 1 Hz - 30 kHz NPN	frequency „A“ 1 Hz - 30 kHz HTL-TTL 1 Hz - 30 kHz PNP 1 Hz - 30 kHz Namur
INPUT 2 (CHANNEL „B“)	frequency „B“: 1 Hz - 30 kHz NPN	frequency „B“: 1 Hz - 30 kHz HTL-TTL 1 Hz - 30 kHz PNP 1 Hz - 30 kHz Namur

OUTPUT	
OUTPUT 1 (CHANNEL „A“)	0(4) - 20 mA, speed „A“
OUTPUT 2 (CHANNEL „B“)	0(4) - 20 mA, speed „B“

RELAY	
K1: (CHANNEL „A“)	changer, 30 V, AC, 1A inductive direction of speed „A“ or customer-specific parameterisation using Esters Configuration Tool (direction of speed „A“, „B“, limit value or failure)
K2: (CHANNEL „B“)	changer, 30 V, AC, 1A inductive direction of speed „A“ or customer-specific parameterisation using Esters Configuration Tool (direction of speed „A“, „B“, limit value or failure)
K3: LIMIT VALUE	NO switch, 30 V, AC, 1A inductive limit value or customer-specific parameterisation using Esters Configuration Tool (direction of speed „A“, „B“, limit value or failure)
K4: DEVICE STATUS	NO switch, 30 V, AC, 1A inductive failure or customer-specific parameterisation using Esters Configuration Tool (direction of speed „A“, „B“, limit value or failure)





## FMP 1836-8001 for limit value monitoring

MEASUREMENT INPUT	
INPUT 1 (CHANNEL „A“)	frequency „A“ 10 - 1 kHz with 5% duty cycle, impulse length > 500 ms
INPUT 2 (CHANNEL „B“)	frequency „B“ 10 - 1 kHz with 5% duty cycle, impulse length > 500 ms

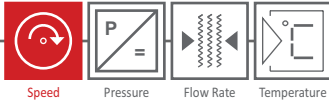
RELAY	
K1: LIMIT VALUE „MIN“ (CHANNEL „A“)	NO switch, 30 V, AC, 1A inductive
K2: LIMIT VALUE „BAND“ (CHANNEL „A“)	NO switch, 30 V, AC, 1A inductive
K3: LIMIT VALUE „MAX“ (CHANNEL „A“)	NO switch, 30 V, AC, 1A inductive
K4: LIMIT VALUE „MIN“ (CHANNEL „B“)	NO switch, 30 V, AC, 1A inductive
K5: LIMIT VALUE „MIN“ (CHANNEL „B“)	NO switch, 30 V, AC, 1A inductive
K6: LIMIT VALUE „BAND“ (CHANNEL „B“)	NO switch, 30 V, AC, 1A inductive
K7: LIMIT VALUE „NOTCH“ (CHANNEL „A“)	NO switch, 30 V, AC, 1A inductive
K8: DEVICE STATUS	NO switch, 30 V, AC, 1A inductive

Rev.-Nr.: FMP 1836-DS 109 E-V1.1.2018-02-01

## Common technical details

ELECTRICAL VALUES	
ACCURACY	$\pm 0,05 \% \text{ EW} \pm 1 \text{ digit at } 23 \text{ }^\circ\text{C}$
POWER SUPPLY	24 V, DC $\pm 3 \text{ V}$
CURRENT CONSUMPTION	max. 1,25 A, protection by 3 A fuse or intrinsically safe power supply
POWER CONSUMPTION	max. 30 VA

ENVIRONMENTAL INFLUENCES	
AMBIENT TEMPERATURE	-10 to +55°C
STORAGE TEMPERATURE	-20 to +85°C
TEST VOLTAGE	3 kV
HUMIDITY CLASS	E-DIN 40040
ELECTROMAGNETIC COMPATIBILITY	acc. to EN 61000



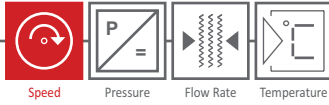
Speed Pressure Flow Rate Temperature

INTERFACES	
USB	Mini-USB connection (5-pin, USB 2.0) for configuration
PROFIBUS-DP (OPTIONAL)	data transmission via PROFIBUS-DP Protokoll
MODBUS RTU (OPTIONAL)	data transmission via Modbus RTU Protokoll
MODBUS TCP (OPTIONAL)	data transmission via Modbus TCP Protokoll

DISPLAY, HOUSING, WEIGHT	
DISPLAY	LCD-display display height: 8 mm
STANDARD HOUSING FOR RAIL MOUNTING	dimensions: 100 mm (B) x 100 mm (H) x 107 mm (T) material ABS UL 94 V0 protection class: IP 20 net weight: approx. 480 g
PROTECTIVE HOUSING FOR WALL MOUNTING (OPTION M104)	dimensions: 343 mm (B) x 330 mm (H) x 210 mm (T) with tab and high-strength cable gland protection class: IP 65

PROTECTIVE HOUSING FOR WALL MOUNTING M104





## Order information

### FMP 1836

FMP 1836-	8008
INPUT	
1: frequency „A“	•
2: frequency „B“	•
OUTPUT	
9: 0 (4) - 20 mA, channel „A“	•
10: 0 (4) - 20 mA, channel „B“	•
RELAY	
K1: changer	•
K2: changer	•
K3: NO switch	•
K4: NO switch	•

FMP 1836-	8001
INPUT	
1: frequency „A“	•
2: frequency „B“	•
RELAY	
K1: NO switch „limit value MIN A“	•
K2: NO switch „limit value BAND A“	•
K3: NO switch „limit value MAX A“	•
K4: NO switch „limit value MIN B“	•
K5: NO switch „limit value BAND B“	•
K6: NO switch „limit value MAX B“	•
K7: NO switch „limit value NOTCH A“	•
K8: NO switch „device status“	•

Rev.-Nr.: FMP\_1836-DS\_109 E-V1.1.2018-02-01

### Optionale device functions and housing

FMP 1836-800x-00Y0	Y	
	0	without option
	1	interface PROFIBUS DP
	2	interface Modbus RTU
	4	interface Modbus TCP
<b>HOUSING</b>		
M104		protective housing for wall mounting, protection class IP65



Speed



Pressure



Flow Rate



Temperature

## Incremental Speed Impulse Sensors

Collection of electromagnetic and hall effect impulse sensors for pole wheel scanning.

For further information see datasheet DS 103 E.



## Pole wheels

Collection of pole wheels

For further information see datasheet DS 107 E.