

Take the Best – Separate the Rest

**Decanter Monitoring
Unit
DMU 3000**

Application

Monitoring of Decanter and
control of 2-gear-drive system



Operating principles and constructional features

Function:

The following functions have been realised with the decanter monitoring unit DMU 3000:

- measuring the bowl and the gear speed,
- calculating the differential speed between bowl and scroll speed,
- regulating the differential speed (only with 2-gear drive and differential drive) and
- displaying the bowl speed, the differential speed and the secondary drive torque (only with 2-gear drive and differential drive) of the connected decanter.

Features:

The decanter monitoring unit has the following features:

- Display for machine observation and operation
- Multi-language text display
- Function keys with LED status indication
- for 24V control voltage
- optional analogue outputs for bowl speed, differential speed and torque
- High functional reliability
- Long service life



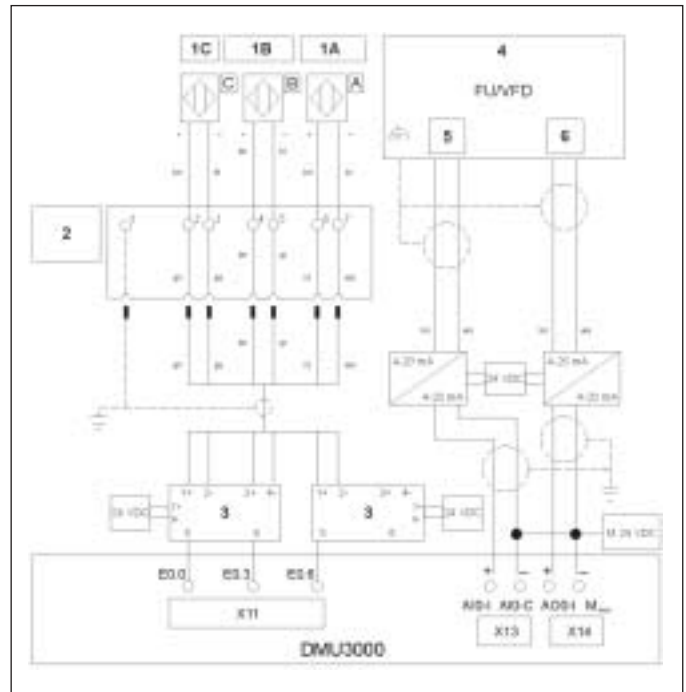
Rear view (example)

Languages:

Two different languages are selectable at this time:

- English Manual part no.: 8185-9001-015
- German Manual part no.: 8185-9000-015

Example



- 1A Gear input speed sensor
- 1B Gear housing speed sensor
- 1C Bowl speed sensor
- 2 Terminal box X7 on the decanter
- 3 Output stage sensor
- 4 Secondary drive frequency converter
- 5 Torque analogue output
- 6 Set speed analogue input

Measuring:

The bowl and gear speeds of the connected decanter are measured. This is realized using speed initiators installed on the decanter. The following speeds are measured:

- Bowl speed
- Gear input speed
- Gear house speed (only with 2-gear decanters)

Calculating:

The differential speed between bowl and scroll speed is calculated. The calculation is based on the measured speeds and the entered decanter parameters.

Display:

The following measured and/or calculated values are displayed:

- Bowl speed
- Differential speed
- Torque of secondary drive (only with 2-gear drive and differential drive, this value is measured in the frequency converter)

Control:

The differential speed of the connected decanter is controlled. This is done as a function of the torque occurring during solids conveyance. Automatic differential speed control requires that two pre-conditions are met:

- the decanter has a 2-gear drive or a differential
- the decanter controlling unit DMU 3000 is connected to a frequency converter

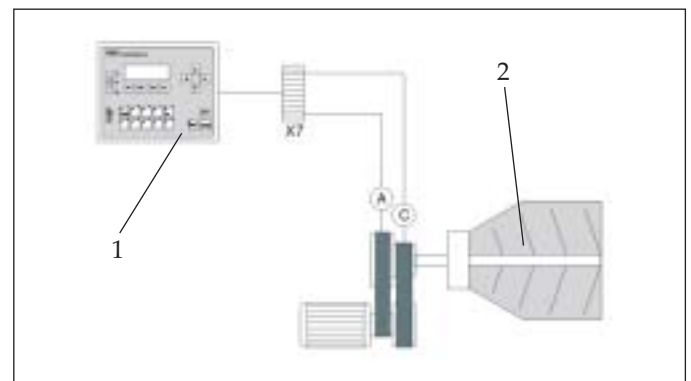
Settings:

The operator can use the keyboard to make the following settings:

- Machine- and product-specific presets
- Limit values
- System-specific settings

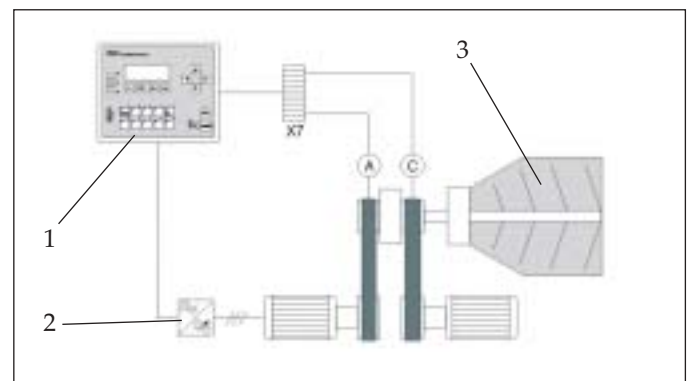
Applications:

Standard drive



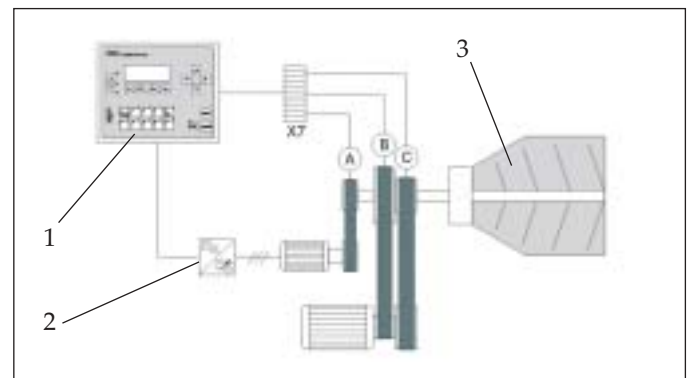
- 1 Decanter monitoring unit DMU 3000
- 2 Decanter
- X7 Terminal box on the decanter
- A Gear input speed sensor
- C Bowl speed sensor

Differential drive



- 1 Decanter monitoring unit DMU 3000
- 2 Frequency converter
- 3 Decanter
- X7 Terminal box on the decanter
- A Gear input speed sensor
- C Bowl speed sensor

2-gear drive



- 1 Decanter monitoring unit DMU 3000
- 2 Frequency converter
- 3 Decanter
- X7 Terminal box on the decanter
- A Gear input speed sensor
- B Gear housing speed sensor
- C Bowl speed sensor

Technical data

Connecting voltage and control voltage	DC 24 V (DC 20,4...DC 28,8 V, safety extra-low voltage, SELV) The decanter monitoring unit DMU 3000 has no integrated protection against high-energy disturbing pulses in the μ s range (surge pulse).
Dimensions H x W x D	215 x 165 x 79.5 mm
Cut-out dimension H x W	198 x 148 mm (tolerance:+1/-0.5)
Installation depth without analogue output board	155 mm (as measured from the outside sheet metal edge of the cut-out)
Installation depth with analogue output board	215 mm (as measured from the outside sheet metal edge of the cut-out)
Weight with (without) analogue output board, approx.	1.6 (1.4) kg
Ambient temperature during operation	0 °C to 40 °C with vertical installation
Degree of protection of unit front	IP 65 (when mounted properly)
Degree of protection of unit housing	IP 20
Digital inputs	<ul style="list-style-type: none">• Nominal value DC 24 V• For signal "1" 15 V to 30 V• For signal "0" -3 V to 5 V• Input current for signal "1" typ. 7 mA
Digital outputs	<ul style="list-style-type: none">• Output current up to 0.5 A, total current up to 2 A• Load impedance range 48 Ohm to 4 kOhm• Lamp load 5 W max.
Analogue input	4 mA to 20 mA / 50 Ohm, permanently 2.5 V max.
Analogue output	4 mA to 20 mA load impedance (in nominal range of output) 300 Ohm max.
Display	STN-LC-Display 4 lines of 20 characters each Character height 5 mm LED background lighting
Electrical execution according to EN 60204-1	
Ambient conditions 3C2 in accordance with EN 60721-3-3	



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