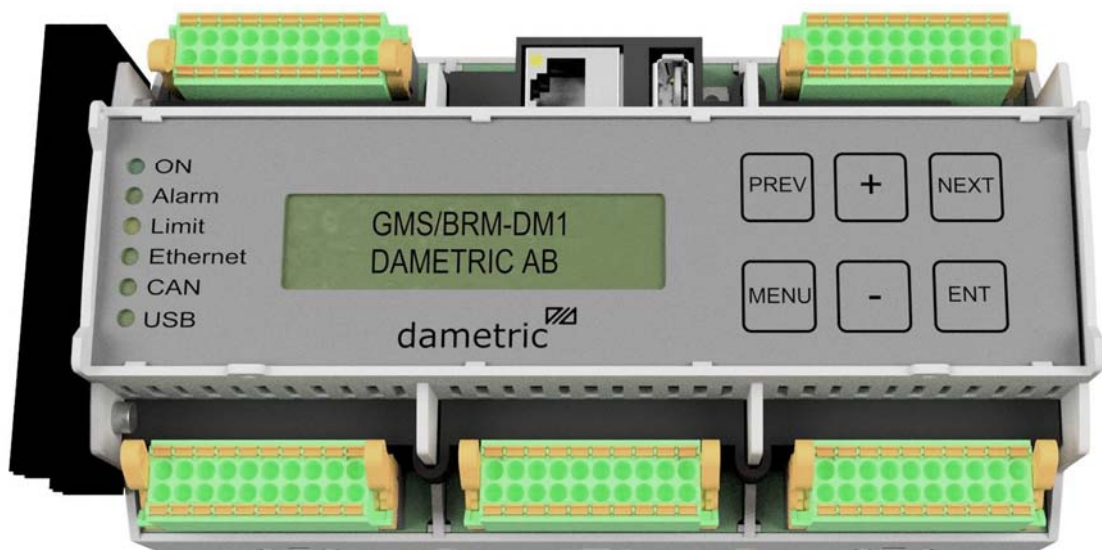




BRM-DM1 BRM-DM2



GMS Basic Refiner Module

TECHNICAL SPECIFICATION

Content

1 GENERAL 3

2 DOCUMENT REVISION 3

3 ARTICLE NUMBER 3

4 USER MANUAL 3

5 INSTALLATION MANUAL 3

6 TECHNICAL SPECIFICATION 4

6.1 BRM-DM1 AND BRM-DM2 4

6.1.1 Closure 4

6.1.2 Display and buttons 4

6.1.3 Led indicators 4

6.1.4 BRM Power supply 4

6.1.5 CMD Control Motor Driver 4

6.1.6 CAN-bus 4

6.1.7 DO - Digital Outputs 4

6.1.8 DI - Digital Inputs 4

6.1.9 POM – Rotor position 5

6.1.10 VIM – Refiner Vibration 5

6.1.11 TVD – Segment Vibration 5

6.1.12 MPM – Main Motor Power 5

6.1.13 HPM – Hydraulic Pressure Monitor 5

6.1.14 OTM – Oil Temperature Monitor 5

6.1.15 FG – FeedGuard Monitor 6

6.2 BRM-DM1 ONLY 6

6.2.1 RMC – Rotor Movement Control 6

6.3 BRM-DM2 ONLY 6

6.3.1 Analog inputs 6

6.3.2 AGS/CPM interface 6

6.3.3 CEC – Can-Ethernet-Converter 6

6.3.4 GCO - Gap Control 6

6.3.5 SSM Safeset Monitoring 6

6.3.6 USB-port 6

6.4 OTHER FUNCTIONS 7

6.4.1 AO - Analog outputs 7

6.4.2 AI - Analog inputs 7

6.4.3 DIO - Digital in-/outputs 7

7 CONTACT 7

1 General

The BRM-DM1 and BRM-DM2 are modules designed to measure and control a refiner for pulp. The BRM-DM1 handles smaller installations while the BRM-DM2 include more functions to handle more complex refiners and installations.

The BRM-DM1 includes the following functions:

- POM, measures the rotor position
- VIM, measures the refiner vibration
- TVD, measures the plate vibration
- HPM, measures the hydraulic pressure from the A- and B-chamber
- OTM, measures the bearing oil temperature, to and from the bearing
- CMD, controls the step motor for rotor positioning
- MPM, measures the main motor power
- CAN, interface for Profibus/Profinet communication
- DO, Digital outputs
- DI, digital inputs
- FG, supervises the FeedGuard function.
- E-RMC, handles the production start position when a TDC-sensor is not used

The BRM-DM2 includes the following functions:

- All functions in BRM-DM1 except the RMC
- AIN, measures an optional analog signal, 4-20mA.
- SSM, supervises a Safeset coupling
- AGS/CMA, feed and interface for an AGS or CMA sensor
- CEC, Ethernet interface for a Panel-PC
- GCO, plate gap control.

2 Document revision

Aug. 20, 2018/BL First release.
Oct. 1, 2018/BL Added SKC article numbers.
Jan. 3, 2020//BL Corrections.
April 22, 2020/BL Added floating data to 6.1.12.

3 Article number

<i>Unit</i>	<i>SKC</i>	<i>Valmet</i>
BRM-DM1	SKC2594365	VAL0399295
BRM-DM2	SKC2601904	VAL0405083.

4 User manual

See document "BRM-DM12 UM EN YYMMDD.pdf" regarding how to use the unit.

5 Installation manual

See document "BRM-DM12 IM EN YYMMDD.pdf" regarding the installation.

6 Technical Specification

6.1 BRM-DM1 and BRM-DM2

6.1.1 Closure

Module size	Height=90 mm, Width=162 mm, Depth=66 mm.
Closure	Polycarbonate (30%GV)
Mounting	DIN-rail
Connections	Plug-in spring connectors, max 1.5mm ² cable area.

6.1.2 Display and buttons

The display and pushbuttons are used to set parameters and to indicate status of the various functions in the unit. The display and buttons are not used if a Panel-PC is included in the GMS system.

Display	LCD type with backlight, 2 rows with 16 characters each
Buttons	6, PREV, PLUS, NEXT, MENU, MINUS and ENTER

6.1.3 LED indicators

6 LEDs on the front of the unit indicates:

ON	Green, indicates power supply
Alarm	Red, on if there is any alarm in the unit
Limit	Yellow, on if any alarm limit is deactivated
Ethernet	Yellow, flashes when Ethernet-communication
CAN	Orange, flashes when CAN- communication
USB	Blue, flashes when USB- communication.

6.1.4 BRM Power supply

Supply voltage	24 VDC, $\pm 10\%$
Power consumption	Nominal 0.4 A, max. 2A

6.1.5 CMD Control Motor Driver

Supply voltage	24 VDC, $\pm 10\%$
Power consumption	Nominal 0.4 A, max. 2A, depending of CMD activation
Step motor	CM-2NMHK with cable K-CM25K
Motor output	2-phase, A+, A-, B+, B-
Phase current, RMS	max 1.5A
Phase current, peak	Max 2.3A

6.1.6 CAN-bus

CAN interface	The interface is used to communicate with other GMS units inside the panel.
Termination	Selectable, 120 Ω /indefinite
Data interface	CAN 2.0B
Data speed	250 kbit/s

6.1.7 DO - Digital Outputs

Output voltage	24VDC
Type	PNP type
Number	8 digital outputs
Max current/output	200mA

6.1.8 DI - Digital Inputs

Input voltage	24VDC
Type	Active high
Number	8 digital inputs
Max current/input	5mA

6.1.9 POM – Rotor position

Transducer	POT-50
Cable	K-POT25
Scaling	0 to 50mm
Logical limit 1	Low
Logical limit 2	High
Logical limit 3	High-High

6.1.10 VIM – Refiner Vibration

Transducer	VIM-T2
Cable	K-VIMS25
Scaling	0 to 25 mm/s
Logical limit 1	High
Logical limit 2	High-High

6.1.11 TVD – Segment Vibration

Transducer	TVD-T2
Cable	K-TVDS25
Scaling	0 to 100 %
Logical limit 1	High
Logical limit 2	High-High

6.1.12 MPM – Main Motor Power

Signal input	4-20mA
Galvanic isolation	No
Scaling	0 to 50 MW
Logical limit 1	Low
Logical limit 2	Low-Low
Logical limit 3	Floating power
Logical limit 3	Floating filtering, 1-20s

6.1.13 HPM – Hydraulic Pressure Monitor

Channel 1	A-Pressure
Channel 2	B-Pressure
Signal inputs	4-20mA. Active output for a pressure transducer.
Galvanic isolation	No
Scaling	0 to 200 ton
Logical limit A-1	Low
Logical limit A-2	Low-Low
Logical limit B-1	High
Logical limit B-2	High-High

6.1.14 OTM – Oil Temperature Monitor

Channel 1	To bearing
Channel 2	From bearing
Signal inputs	Two 3-wire for PT-100 sensor with compensation.
Galvanic isolation	No
Scaling	0 to 100 °C
Logical limit 1-1	High
Logical limit 1-2	High-High
Logical limit 2-1	High
Logical limit 2-2	High-High

6.1.15 FG – FeedGuard Monitor

The monitor is activated when production is turned off and will check that the rotor is backed off sufficiently. The function is configurable by user parameters.

6.2 BRM-DM1 only

6.2.1 RMC – Rotor Movement Control

The RMC function is used to monitor the rotor position during production. The RMC is only used when the TDC/AGS sensor is not installed. The function is configurable by user parameters.

6.3 BRM-DM2 only

6.3.1 Analog inputs

Signal input	4-20mA
Galvanic isolation	No
Scaling	Configurable
Range	Configurable
Logical limit 1	Low
Logical limit 2	Low-LowC

Use one or more AIM-DM1 modules to add more analog input currents, 4-20mA.
Up to 4 AIM-DM1 modules can be added where each module includes 4 analog current inputs.

6.3.2 AGS/CPM interface

AGS = Adjustable Gap Sensor	
CPM = Conductance Profile Measurement	
Supply voltage	24 VDC, $\pm 10\%$.
Power consumption	Nominal 0.4 A, max. 2A
Data interface	CAN 2.0B
Data speed	250 kbit/s

6.3.3 CEC – Can-Ethernet-Converter

The Ethernet interface is used to communicate with a Panel-PC.

6.3.4 GCO - Gap Control

The gap controller will adjust the rotor position to achieve a constant plate gap. The gap is measured with the TDC/AGS sensor. The function is configurable by user parameters.

6.3.5 SSM Safeset Monitoring

Two of the digital inputs can be used to monitor and supervise the Safeset coupling.

6.3.6 USB-port

Use the USB to store parameters and log files from the unit.

6.4 Other functions

6.4.1 AO - Analog outputs

No analog outputs in the module.

Use one or more AOM-DM1 modules to generate analog output currents, 4-20mA.

Up to 4 AOM-DM1 modules can be added where each module includes 4 analog current outputs.

6.4.2 AI - Analog inputs

Use one or more AIM-DM1 integrate addition analog input currents, 4-20mA.

Up to 4 AIM-DM1 modules can be added where each module includes 4 analog current inputs

6.4.3 DIO - Digital in-/outputs

Use a DXM-DM1 module to integrate more digital in- and outputs.

7 Contact

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