








# DTM – RM1

VAL0122841 / SKC9103197

 DISC TEMP MONITOR  DTM-RM1 9103197
DTM-CALIBRATION <input checked="" type="radio"/> SPAN  <input checked="" type="radio"/> ZERO

DTM-LIMITS <input checked="" type="radio"/> OUTPUT LIMIT 1 <input checked="" type="radio"/> ADJUST  <input checked="" type="radio"/> OUTPUT LIMIT 2 <input checked="" type="radio"/> ADJUST  <input checked="" type="radio"/> OUTPUT LIMIT 3 <input checked="" type="radio"/> ADJUST
<input checked="" type="radio"/> <input checked="" type="radio"/> DISPLAY LIMITS
 

## DISC TEMP MONITOR FOR THE RMS-SYSTEM MANUAL





## 2. DESCRIPTION OF OPERATION

The DTM-RM1 unit measures the temperature inside the true disc clearance sensor.

The temperature sensor is placed close to grinding surface, and therefore measures the grinding zone temperature at the TDC-sensor.

The sensor element is of type pt-100, and it is excited with an alternating constant current synchronized with the excitation currents to the TDC-sensor.

The measured voltage across the sensor is synchronised with the excitation and amplified.

The unit must be adjusted at zero (0 °C) and at full span (225 °C).

The monitor includes following functions:

- Zero and span calibration for input signal current.
- Internal zero and span level-adjustments to 1V (0%) and 5V (100%).
- Isolated 4-20 mA output current.
- Voltage output for RMS enhanced display unit.
- 3 limit circuits, which compares the signal to the limit levels. The limits are adjustable from 0 to 225°C. For Limit 1 and Limit 2, the outputs are active when the signal is lower than the adjusted limit level. For Limit 3, the output is active when the signal is higher than the adjusted limit level. The active outputs is indicated at the front panel led's. A not active output initiates a hysteresis on the rising slope of the signal. The output is opto-isolated from the unit, and drives a P-channel power transistor. The transistor is connected to the +rail of the system power supply.
- A current input check circuit that compares the current to preadjusted limits. Any fault deactivates the limit-outputs and generates a -25 % signal amplitude on both the signal and the current output.
- A RMS-system interface that permits readouts of the measured level and the adjusted limit-values to the DCU-RM1 unit. Dc/dc power units, which converts and isolates the 24 Vdc system power supply to the internal supplies: +/- 15 Vdc, +/-12 Vdc and +/- 5 Vdc.
- The unit also feeds the DCA-RM1 unit with power supplies, +15, +12, +5, 0, -5, -12 and -15 Vdc.

### 3. TECHNICAL SPECIFICATION

Article no:	DTM-RM1 / VAL0122841 / SKC9103197		
Power supply input:	+24 Vdc, $\pm 10\%$ , max 2A		
Power supply output:	+15 Vdc/0.05 A, +12 Vdc/1.25 A, +5 Vdc/0.5 A, digital common.	-15 Vdc/0.05 A, -12 Vdc/1.25 A, -5 Vdc/0.5A, Analog common	
	The unit shares the power supply with the DCA-RM1 unit.		
Board dimension:	Height=234 mm, Depth=220 mm, Thickness=30 mm (6 TE).		
Panel adjustments:	LIMIT 1, LIMIT 2, LIMIT 3: 15-turn potentiometers. ZERO-calibration, SPAN-calibration: 15-turn potentiometer.		
Panel output indicators:	LIMIT 1, LIMIT 2, LIMIT 3: green led's.		
Panel switch:	DISPLAY LIMITS: push-button switch.		
Transducer type:	TDC-sensor. TP+TDC      Temperature excitation current TR-TDC      Negative reference current		
Range:	0 - 225 °C		
Internal zero level:	+1.0 V $\pm 0.5\%$		
Internal full-span level:	+5.0 V $\pm 0.5\%$		
External digital outputs:	Opto isolated P-channel fet transistor connected to positive rail of the rms system voltage. Max current, 0.1 A.		
	DO+DTM1	Digital output	LIMIT 1      to PLC
	DO+DTM2	Digital output	LIMIT 2      to PLC
	DO+DTM3	Digital output	LIMIT 3      to PLC
	The DO+DTM1 and DO+DTM2 limits are activated when the DTM value is lower than the adjusted limit level.		
	The DO+DTM3 limits are activated when the DTM value is higher than the adjusted limit level.		
	It is no hysteresis when changing from the active to the inactive state. It is 2 % hysteresis when changing from the inactive to the active state. The led in the front of the unit indicates an activated output.		
Internal digital input:	83 Hz, Synchronisation signal for the pt-100 excitation current. From the DCA-RM1 unit.		
Analog output 1:	Galvanically isolated current, 4-20 mA, $\pm 1\%$ . 0 - 800 $\Omega$ load. 500V. isolation voltage.		
	AO+DTM	Analog output	Analog +
	AO-DTM	Analog output	Analog -
Analog output 2:	Voltage output, 1-5 Vdc, to the RMS-interface.		
	U+DTM	Analog output	Analog +
	U-DTM	Analog output	Analog -
RMS-unit interface:	Yes		

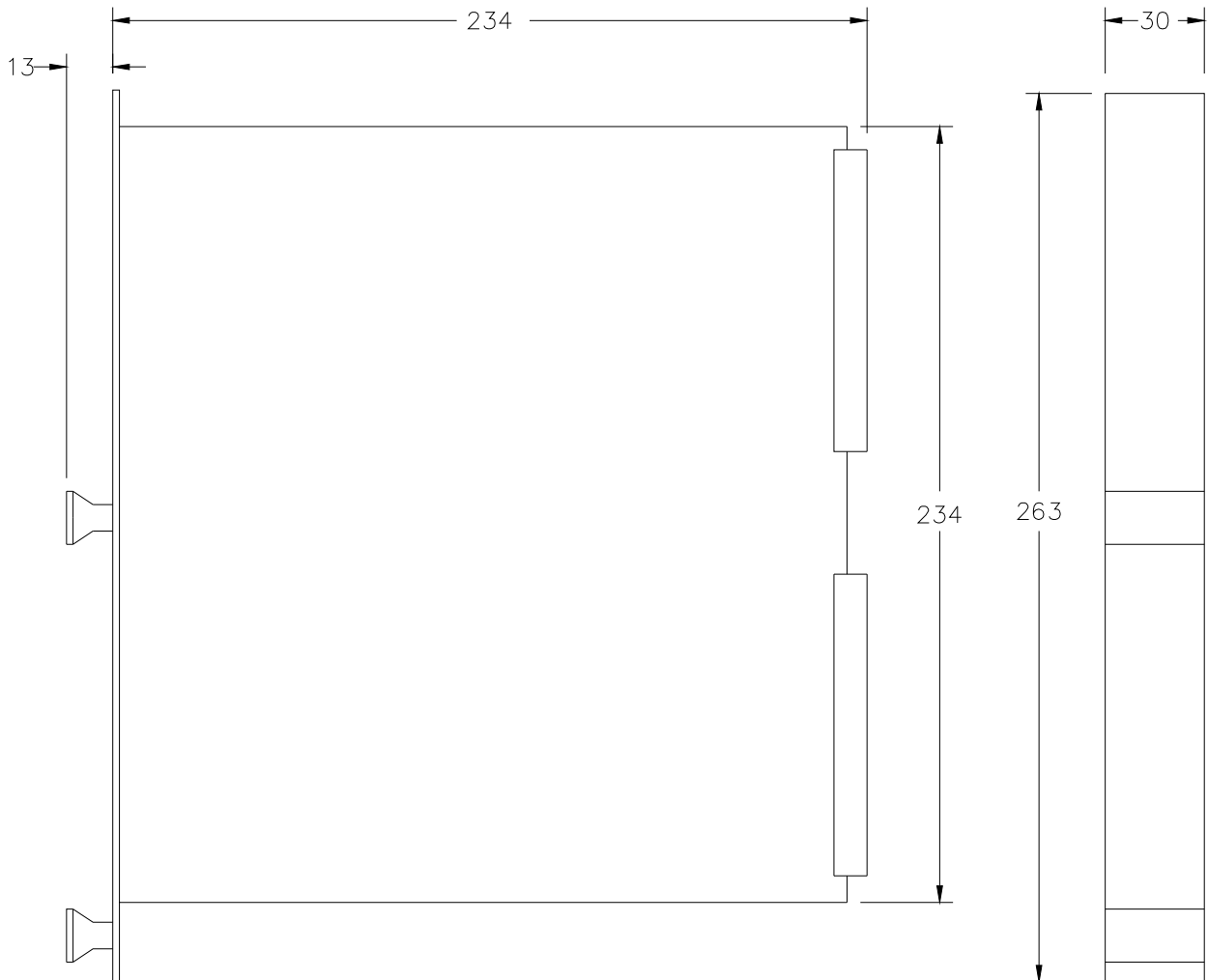
#### 4. ADJUSTMENT

See the CALIBRATION MANUAL for the appropriate system, RMS-SD1, RMS-CD1 or RMS-DD1.

#### 5. CALIBRATION

See the CALIBRATION MANUAL for the appropriate system, RMS-SD1, RMS-CD1 or RMS-DD1.

#### 6. OUTLINE DRAWING



#### 7. CONTACT

Sales, development, production and service:

##### Dametric AB

Jägerhorns Väg 19, SE 141 75 Kungens Kurva, Sweden

Phone: +46-8 556 477 00

Telefax: +46-8 556 477 29

e-mail: [service@dametric.se](mailto:service@dametric.se)

Web site: [www.dametric.se](http://www.dametric.se)

dametric 

Valmet 