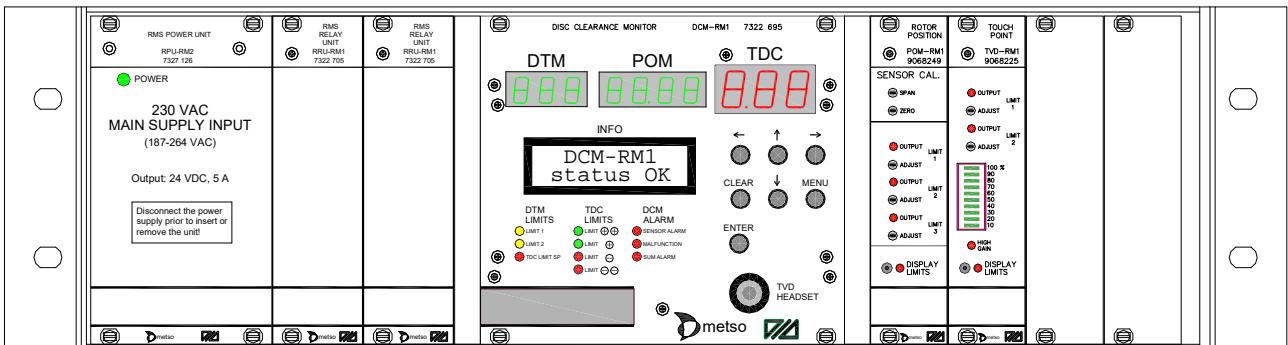




PROGRAMMING

RMS-RS1



PROGRAMMING MANUAL FOR RMS-RS1 SYSTEM



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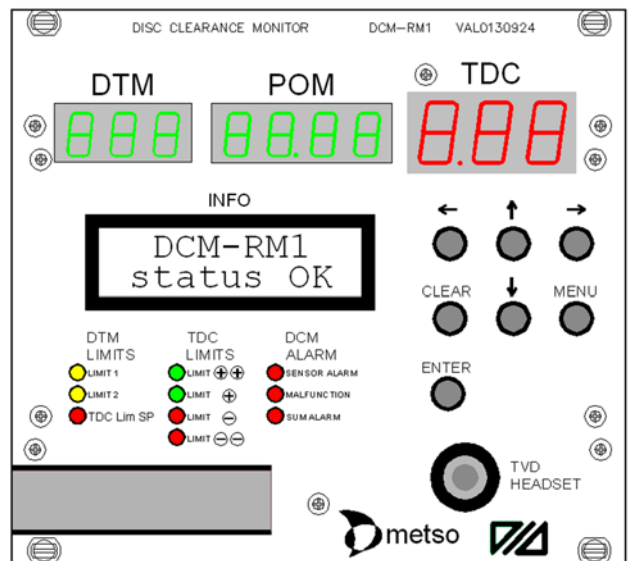
1. General

Programming is carried out with the DCM unit in the rack with the aid of buttons and an LCD.

Press “MENU” to start the menu manager, then the first group and its first function is shown. A group contains a number of related functions.

Here functions refer to parameters, alarm limits or carrying out calibration.

Browse between groups with “←” and “→” and between functions with “↑” and “↓” in the following table:



“←”	“→”	Set:	Units:	DTM Cal:
TDC Cal:	DCM Lim:			
“↑” Zero	TDC++	Motor speed	DTM	Zero
Span	TDC+	TDC Range	POM	Span
“↓” Coarse	TDC SP	TDC Filter	TVD	TDC zero result
	TDC-	TVD Cal.Lev.	VIM	TDC span result
	TDC --	TDC Zero Par	OTM-1	*TDC Cal. status
	DTM1	TDC Span Par	OTM-2	*DXM Serial
	DTM2	POM Coarse IL	MPM	*DXM Input/Output
		MPM Power	HPM	*FeedGuard status
		HPM A-Press	DXM	*FeedGuard dist.
		HPM B-Press		
		Gap/POM rat.		
		CAN node no.		
		RMS System		
		*FG Timeout		
		*FG Pist.len.		
		*FG Safe dist.		
		*FG Pist.del.		

(The function TDC Cal. is not shown if an external calibration switch has been chosen).
When “CLEAR” is pressed, the function is terminated and the program returns to normal display.

When browsing to the next or previous group (with “→” or “←”), the group’s first function is always shown.

Editing

Press “ENTER” to edit the chosen function, which is indicated by the text “edit” appearing. Change the value (or choose a value from a list) with “↑” and “↓”.

```
Group: Function
Edit value sort
```

End by pressing “ENTER”, when you will be asked whether the change should be saved. The default answer is “No” and if “ENTER” is pressed again, the value is not saved. To save, “←” or “→” must first be pressed (the text changes to “Yes”) and then “ENTER” (“saving...” is shown for one second).

```
Group: Function
Save? No
```

```
Group: Function
Save? Yes
```

If “MENU” is pressed, editing ends and no value is saved.

If “CLEAR” is pressed, the unit returns to normal display.

The unit will automatically return to normal display if no button is activated within about 10 minutes.

```
Group: Function
Saving...
```

Read serial number, software and hardware revision.

Press the “ENTER” key from the normal readout and the display will indicate the actual serial number as well as the revision of the software and the hardware.

```
Serial Rev.SW/HW
1001 1.04/2.10
```

2. Menu groups

When “MENU” is pressed, the first group’s first function is shown, then press “→” or “←” to browse between the groups.

In general, the function of each group is as follows:

TDC Cal: Zero	Calibrate the TDC sensor, see KAL-RS1 manual (for internal calibration).
DCM Lim: TDC++	Adjust the DCM unit’s alarm limits, see KAL-RS1 manual.
Set: Motor Speed	Range programming, see below
Units: DTM	Activated unit programming, see below.
DTM Cal: Zero	Calibrate DTM measuring, see KAL-RS1 manual. TDC cal. Results.

```
TDC Cal: Zero
0.50 mm
```

3. Menu group TDC Cal

This group is used if the internal buttons on the DCM-RM1 unit is used for TDC calibration. Otherwise it is not shown.

TDC Cal Zero

Zero calibration. The TDC value is set to the predefined zero parameter, usually 0.50 mm.

TDC Cal Span

Span calibration. The TDC value is set to the predefined span parameter, usually 1.50 mm.

TDC Cal Coarse

The coarse calibration set the TDC reading to a roof value It can be 3.80 or 4.50 mm due to the selected TDC range setting. This calibration is done if the sensor is exchanged.

4. Menu group Set"

This group includes the following functions:

Set:Motor Speed
xxxx rpm

Motor Speed

Parameter for nominal main motor speed. Step between 480 to 3000 rpm in steps of 1 rpm. Default value is 1500 rpm. The parameter is used to synchronize the TDC measurement to one turn of the rotor.

TDC Range

Parameter for the TDC analogue output range (4-20mA). Chose between 2.00 and 3.00 mm. The indicated linear range on the display is always 0.00-3.00 mm. Default 2.00 mm.

TDC Filter

Sets the filtering of the TDC-measurement. Set from 0.5 to 10 Hz in steps of 0.5 Hz. Default is 2 Hz.

TVD Cal.Lev.

Definition of touch-point value at zero calibration. Set between 5 to 100 %. Default is 50 %.

TDC Zero Par

Parameter for definition of TDC value during zero calibration. Choose between 0.20 and 1.00 mm in steps of 0.10 mm. The standard value is 0.50 mm.

TDC Span Par

Parameter for definition of TDC value during amplification calibration. Choose between 1.00 and 2.00 mm in steps of 0.10 mm. The standard value is 1.50 mm.

TDC Coar Par

Parameter for definition of the TDC-value at roof-calibration. Select 2.50 to 4.50 mm in steps of 0.10 mm. Default is 3.80 mm.

POM Coarse IL

This parameter determines the lowest rotor position value for a TDC coarse calibration. Choose between 0.00 to 50.00 mm in steps of 0.10 mm. The standard value is 0.00 mm which means that the function is disabled.

MPM Power (for optional unit MPM-RM2)

Parameter for nominal main motor power. Step between 0.1 and 50 MW in steps of 0.1 MW. The standard value is 5 MW.

HPM-A Press (for optional unit HPM-RM1)

Parameter for nominal A chamber pressure. Step between 10 and 150 tonnes in steps of 0.5 tonnes. The standard is 50 tonnes.

HPM-B Press (for optional unit HPM-RM1)

Parameter for nominal B chamber pressure. Step between 10 and 150 tonnes in steps of 0.5 tonnes. The standard is 50 tonnes.

Gap/POM ratio

Parameter for plate gap to rotor position (POM). Step between 0.01 and 1.00 in steps of 0.01 (the standard is 1.00). Use 1.00 for all flat zone TDC's and 0.25 for CD-zone TDC in the RGP-CDXX refiners.

CAN node no.

This parameter is used when an AGS sensor is used in a RMS-RS1 system. Set to "0" in TDC systems, to "1" in single disc systems with the AGS sensor and to "1" or "2" in CD refiners with AGS.

RMS System

Select RMS-system, "TDC", "AGS-SD", or "AGS-CD".

FG Timeout *

Parameter for timeout of FeedGuard supervision. Select between 0-60s. a 0 value disables the FeedGuard supervision function.

FG Pist.len. *

Set the distance of the FeedGuard valve. Interval 0.00 - 10.00 mm in steps of 0.10mm.

FG Safe dist. *

Safe distance for the FeedGuard supervision. 0.00 to 10.00 mm in steps of 0.10mm.

FG Pist.del. *

The delay before a POM value is saved after the FeedGuard valve is discharged. Step between 0.1 and 3.0 s in steps of 0.1 s.

* These parameters can only be reached if the DXM unit is activated as "ON_CAN".

5. Menu group Units

Set the respective unit to "ON" to activate the unit for the DCM's sum alarm function.

Units: DTM XXX

For the standard units, DTM, POM and TVD, the parameter can be set to "ON" or "OFF".

For the optional units, the value can be set to "OFF", "ON-RS1" or "ON-RS2". Set to "ON-RS1" when the optional card is placed to the left of the two available card slots and to "ON-RS2" when it is placed to the right.

DTM Activate disc temperature measurement for sum alarm

POM Activate rotor position measurement for sum alarm

TVD Activate touch point measurement for sum alarm

VIM Activate vibration measurement for sum alarm

OTM-1 Activate first temperature measurement card for sum alarm

OTM-2 Activate second temperature measurement card for sum alarm

MPM Activate motor power measurement for sum alarm

HPM Activate hydraulic pressure measurement for sum alarm

DXM Activate/Deactivate the Digital Expansion Module. This used to get additional inputs and outputs. This is used for the FeedGuard supervision.

6. Menu group DTM Cal

DTM Cal. Zero Calibrate the DTM measurement. See the KAL-RS1 manual.

DTM Cal: Zero 0 °C

DTM Cal. Span Calibrate the DTM measurement. See the KAL-RS1 manual.

TDC Cal. Result Zero View the result of the latest TDC zero calibration.

TDC Cal. Result Span View the result of the latest TDC span calibration.

*TDC Cal. status Co=X, Sp=X, Ze=X. Calibration status for coarse (Co), span (Sp) and zero calibrations (Ze). 0=not calibrated, 1=calibrated.

At coarse calibration: "Sp" and "Ze" are set to 0.

At zero calibration: "Ze" is set to 1.

At span calibration: "Sp" is set to 1, "Co" is set to 0.

*DXM Serial XXXX Sw=X.XX, Hw=X.XX. Indicates info of the DXM-unit.

"No connection" is shown if the communication fails.

*DXM Input/output In=X, Out=X. Indicates status of the digital in- and outputs of the DXM unit.

A hexadecimal number reflects the value of 4 in or outputs.

Example: Out=5 means 1+4 or K3/1=1 (value 1) + K3/3 = 1 (value 4).

*FeedGuard status Indicates status of the FeedGuard supervision. The "Retraction" indication also includes the count-down time.

*FeedGuard dist. Indicates the result of the latest FeedGuard supervision.

* These are only shown if the DXM-unit is activated as "ON_CAN". If communication to the DXM fails, "No connection" is shown.

7. Revisions

- Aug. 27, 2007 Updated for DCM-RM1 version 1.60 with higher measuring range.
Feb. 10, 2010 Updated for AGS.
Nov. 2, 2010 The third DTM limit is replaced by a fifth TDC limit (TDC-SP).
June 24, 2014 Added FeedGuard supervision and the DXM-DM1 unit.
DCM-RM1 with software 1.70 or later.
Oct. 8, 2014 Updated DCM-RM1 to 1.7: 3-point measurement of the FG-supervision.

8. 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 Website: www.dametric.se

dametric 

Valmet 