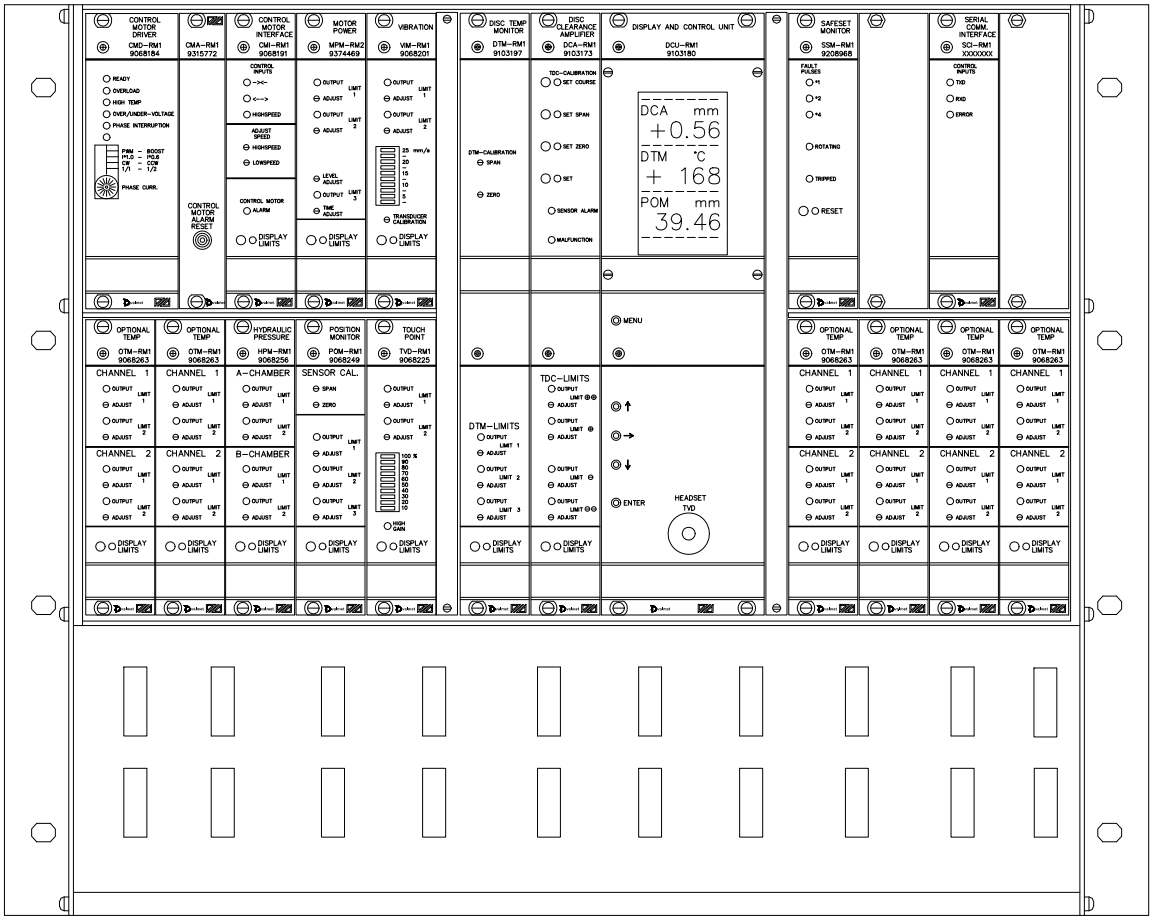
dametric

PROGRAMMING RMS–SD1



Valmet

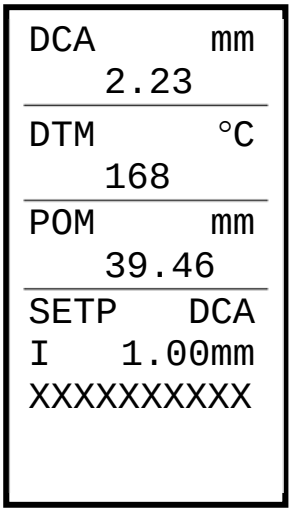
PROGRAMMERS MANUAL

FOR THE RMS-SD1 SYSTEM

Content

1. DCU DISPLAY READ-OUT

1.1. NORMAL READ-OUT



MENU	Select MENU
↑	Deactivates the special regulator menu
→	No function
↓	Activates the special regulator menu
ENT	No function

XXXXXXXXX

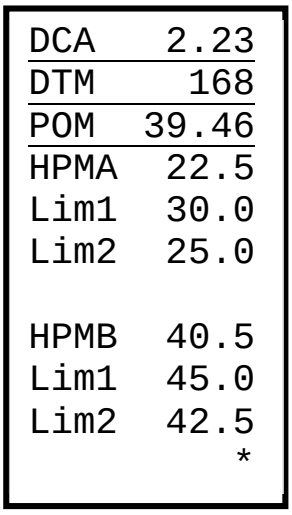
SETP DCA X.XX is the regulator set-point. I means internal value, E indicates that the setpoint is external and is generated from a remote equipment.

NOT READY indicates that the DCU-RM1 unit is not ready. This indicates an internal alarm but is also activated during the first 8 seconds after power-up.

REG.ACTIV indicates that the internal gap-regulator is activated.

FEEDG.ACT indicates that the feed-guard retraction function is activated.

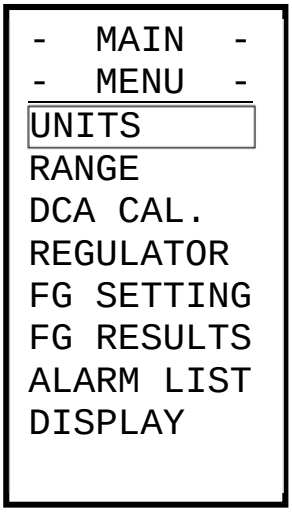
1.2. WITH RMS-UNIT LIMITS



MENU Return to NORMAL READ-OUT
(The display is turned off automatically after approx. 2 min.)
↑ No function
→ Disables the display auto-turn-off
↓ No function
ENT No function

The "DISPLAY LIMITS" on the HPM-unit is activated in this example.
* This indicates that the auto-turn-off is not in use.

2. MAIN MENU



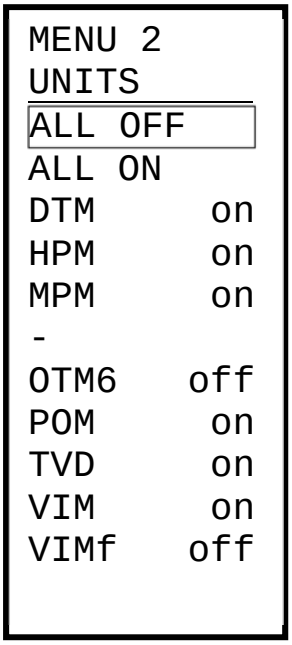
MENU Return to NORMAL READ-OUT
↑ Move cursor up
→ No function
↓ Move cursor down
ENT Enter selected menu

The menus cannot be entered when the feed guard, the regulator or the touchpoint-function is activated.
If no button is pushed within five minutes, the program automatically returns to NORMAL READ-OUT.
If "DISPLAY LIMITS" is pushed on any unit, the program escapes from the menus and shows the limits for the chosen unit.

The menus will not be interrupted, when you are changing a value of a menu function and when a menu function is changed without having saved the change.

UNITS	Enable/disable units in the system
RANGE	Set ranges
DCA CAL.	Set parameters for DCA calibration
REGULATOR	Set disc gap regulator parameters
FG SETTING	Set the parameters for the feed guard retraction function
FG RESULTS	Read the feed guard retraction results.
ALARM LIST	Displays the sum alarm units.
DISPLAY	Select type of display.

3. UNITS



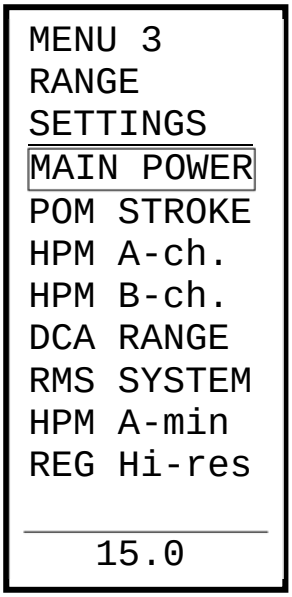
MENU	Return to MAIN MENU
↑	Move cursor up / scroll up
→	Toggle on/off at cursor
↓	Move cursor down / scroll down
ENT	Return to previous menu

Used to enable/disable units and each unit can be set to one of three states:

Off	Turned off and no value is indicated.
On	Turned on and the values is used.
On+A	Turned on and the alarm is included in the sum alarm.

The CMD, CMI and DCA unit are not included since they have their own alarm outputs.
The "ALL OFF"/"ALL OFF" functions will set all units off or on.
The TVD unit must be set "on" to be able to use the touch point function.
The MPM unit must be set "on" to be able to use the "++Limit" display mode. The delay for the sum alarm output is 3 sec, except for the MPM unit that has a 15 sec delay
VIMf can only be set on when the RMS SYSTEM menu is set to RMS-DD1.

4. RANGE SETTINGS



MENU	Return to MAIN MENU
↑	Move cursor up
→	No function
↓	Move cursor down
ENT	Enter selected function

Use the "↑" and "↓" buttons to select a function and then press ENTER. The bottom line will then be displayed in reversed video, indicating that the value can be changed.
Now change the value with the "↑" and "↓" buttons, and press ENTER again to set the value.
When exit this routine, an additional question will be asked if to save the changed settings.

"MAIN POWER". Set the full scale of the main motor power (=100 %). The up and down buttons will count continuously if held in. Max: 50.0 MW, Min: 0.5MW, Default: 10.0 MW. The step is dependent of the current setting: <2 MW: 0.01, 2-4 MW: 0.02, 4-10 MW: 0.05, 10-20 MW: 0.1, 20-40MW: 0.2, 40-50MW: 0.5

"POM STROKE". Set the rotor position monitor stroke distance. Only 50 mm is used.
Max: 200, min: 20, default: 50, step: 10mm.

"HPM A-ch." Set the HPM A-chamber-force full-scale indication. Max: 160.0, min: 10.0, default: 50.0, step: 0.1/1.0 ton, default values:

Refiner	*ton*	*Refiner*	*ton*
RGP-2XX (3 lager)	45	RGP-A	97
RGP-2XX (2 lager)	37	CONFLO	42
RGP-268	55		

"HPM B-ch." Set the HPM A-chamber-force full-scale indication. Max: 160.0, min: 10.0, default: 50.0, step: 0.1/1.0 ton, default values:

Refiner	*ton*	*Refiner*	*ton*
RGP-2XX (3 lager)	90	RGP-A	160
RGP-2XX (2 lager)	54	CONFLO	42
RGP-268	110		

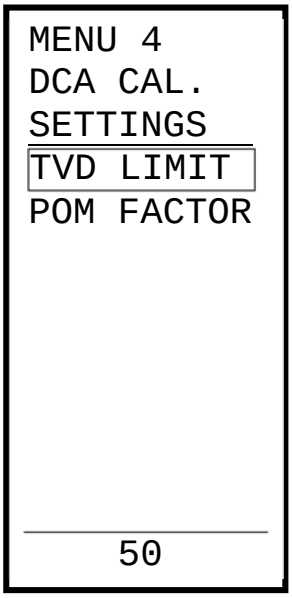
"DCA Range." Set the measuring range for the DCA unit (2.00 or 3.00 mm). Max: 3.00, Min: 2.00, default: 2.00.

"RMS SYSTEM" Setting of the RMS-system (SD or DD).

"HPM A-min" Setting of lowest allowed A-chamber force.
Only DCU-RM1 with software version 7.xx. The parameter sets the lowest allowed force on the A-chamber (plates apart) during gap control. The rotor backs off 0.05mm if the A-force drops below the set value. Set to 0.00 to disable the function. Max: 10.0 ton, Min: 0.00 ton.

"REG Hi-res" Use of high resolution gap controller.
Only DCU-RM1 with software version 7.xx. Set to 1 to enable or 0 to disable.
This function is only usable for a conical refiner with the ratio of 1:4 between the rotor position and the plate gap, like the RGP-CF82 Conflo.
The use of one additional decimal for the plate gap and the gap controller set-point, lowers the least move distance for the plate gap from 0.01 mm to 0.0025 mm (from 0.04 to 0.01 mm on the rotor position). The gap controller dead-band has to be set to 0.00 to utilize the resolution.

5. DCA CALIBRATION SETTINGS



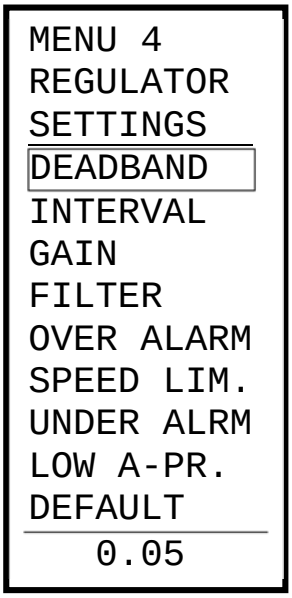
MENU Return to MAIN MENU
↑ Move cursor up
→ No function
↓ Move cursor down
ENT Enter selected function

Use the "↑" and "↓" buttons to select a function and then press ENTER. The bottom line will then be displayed in reversed video, indicating that the value can be changed.
Now change the value with the "↑" and "↓" buttons, and press ENTER again to set the value.
When exit this routine, an additional question will be asked if to save the changed settings.

"TVD LIMIT". Limit for the preset of the relative POM (-0.10 mm) during TDC calibration. This parameter sets the trig point for the TVD-signal. When the limit is passed, the displayed POM-value at the PDU-unit is preset to -0.10 mm. This function is used only in the calibration mode, when the touch-point is established. Max: 100 %, min: 0 %, default: 50 %, step: 5 %.

"POM FACTOR". The factor is set after the relation between a rotor position change and gap change. The factor affects the relative POM-reading during calibration and the Gain in the gap regulator. Max: 1, min: 0.25, default 1.
1.00 For flat zone refiners.
0.25 For a Conflo refiner.

6. REGULATOR SETTINGS



MENU	Return to MAIN MENU
↑	Move cursor up
→	No function
↓	Move cursor down
ENT	Enter selected function

Use the "↑" and "↓" buttons to select a function and then press ENTER. The bottom line will then be displayed in reversed video, indicating that the value can be changed.
Now change the value with the "↑" and "↓" buttons, and press ENTER again to set the value.
When exit this routine, an additional question will be asked if to save the changed settings.

Modifications cannot be done while the regulator is active.
"DEADBAND". The DEADBAND sets the allowed difference between the set point value and the TDC-value without a regulation action. Max: ±0.25, min: ±0.01, default: ±0.05, step: ±0.01 mm.

"INTERVAL". The INTERVAL sets the time between regulation actions. The interval value defines the maximum value of the filter factor. This parameter also affects the flat-zone filter factor. Max: 20 s, min: 2 s, default: 10 s, step: 1 s.

"GAIN". The GAIN sets the duration of the output regulation action. It is normally set to 100 % but can be set to higher value to over-compensate or to lower values to under-compensate.
Max: 120, min: 40, default: 100, step: 5 %.

"FILTER". Sets the filtering factor of the DCA-signal.
DCA-values are read with an interval of one second. The filter factor sets the number of readings to use when calculating the mean value. 1 means therefore no filter. The numbers within brackets are the maximum setting of the filter factor, and are limited by the interval setting to maintain stability. (Interval value divided with 2, rounded to the nearest highest integer. Ex. interval = 11 =>> max filter factor = 6). Max: 10, min: 1, default: 5, step: 1 s

"OVER ALARM". Over alarm is the maximum allowed regulation distance together by the regulator, and is in percent of the set limit value or by the adjusted absolute distance in mm (0.00 disables the function). The function is reset when the regulator is started, and will monitor the sum of the regulation distance together and apart. If the distance together exceeds the distance apart with the preset over alarm distance, the regulator is prevented from moving plates together and an alarm is generated. A set point change larger than ± 0.0 3mm, will also reset the function. The register is also decreased by a clock signal, which is calculated by the speed limit setting. When properly set, this function will then generate alarm for eventual TDC-sensor malfunction, but not when the regulator compensates for changes due to the heating of the refiner.
Max: 95%/1.00mm, min: 5%/0.00mm, default: 50 %, step: 5%/0.05mm.

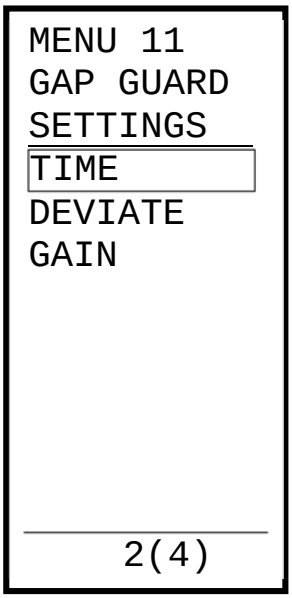
”SPEED LIMIT”. This parameter sets the maximum speed allowed for the regulator.
Max = 1.00 mm/min, min: 0.02 mm/min, default: 0.1 mm/min, step: 0.02 mm/min.

”UNDER ALRM”. This sets the permitted regulation intervals in succession not reaching the dead band, without any alarm generated. A counter is increased one step for each interval period, when the DCA-value is not within the dead band. An alarm output is activated if the counter exceeds the setting. Any interval period with the DCA-value within or passing the dead band, resets the counter. A set point change bigger than ± 0.03 mm, resets the register.
Max: 20, min: 5, default: 10, step: 1.

” LOW A-PR.”. The parameter is set to “enabled” to prevent the regulator from regulate together at a low A-chamber pressure.
Max: ”enabled”, min: ”disabled”, default: ”disabled”.

”DEFAULT. Sets the default values.

7. GAP GUARD SETTINGS



MENU Return to MAIN MENU
↑ Move cursor up
→ No function
↓ Move cursor down
ENT Enter selected function

Use the "↑" and "↓" buttons to select a function and then press ENTER. The bottom line will then be displayed in reversed video, indicating that the value can be changed.
Now change the value with the "↑" and "↓" buttons, and press ENTER again to set the value.
When exit this routine, an additional question will be asked if to save the changed settings.

GapGuard - faster than a regulation and less dramatic than the FeedGuard.
The purpose of the GapGuard is to prevent the flat zone to reach the minus-minus-limit, and thereby preventing a FeedGuard. The GapGuard works with the flat zone regulator and the TDC-value, and the output is to move the rotor quickly apart to increase the plate gap. The GapGuard continuously measures the flat-zone gap and compares it with the set point limit. If the difference is larger than an adjustable value, the DCU will start the GapGuard function. That means that the stepping motor, which controls the rotor position, will move the plates apart at high speed. The distance it will run is proportional to the actual difference between the plate gap and the set point limit. After a GapGuard is started, the DCU will continue to regulate as usual with the first regulation a full regulation interval after GapGuard has finished.

"TIME". The time setting determines the minimum time between two consecutive GapGuards in seconds. It is needed because of the filter time at the TDC-readings. Time is adjustable in the range 1-4 s when the regulator interval is 10s. If the interval is reduced, the maximum allowable setting will also be reduced. Max: 10, min: 1, default: 2, step: 1 s.

"DEVIATE". With DEVIATE you set how much the plate gap of the flat zone can be smaller than the set point limit. E.g. if the set point is 0.8 mm and DEVIATE is set to 0.20 mm, GapGuard will be started if the flat zone plate gap is below 0.60 mm. You can also choose to set the distance to be a percentage of the set point limit. The range of the DEVIATE setting is from 0 to 1.00 mm or 1% to 99% of the set point limit. If you exceed 99% setting or 1.00 mm setting, the unit will automatically switch to the other method. The GapGuard is disabled if the distance is set to 0.00 mm.
Max: 99%/1.00mm, min: 1%/0.00mm, default: 25%, step: 1%/0.01mm.

"GAIN". The distance that the rotor will move when GapGuard is triggered is proportional to the difference between the actual plate gap reading and the set point limit. This difference is then multiplied with the gain setting to enable under- or over-compensation
Max: 250, min: 50, default: 100, step: 1 %.

8. FEED GUARD SETTINGS

MENU	Return to MAIN MENU
↑	Move cursor up
→	No function
↓	Move cursor down
ENT	Enter selected function

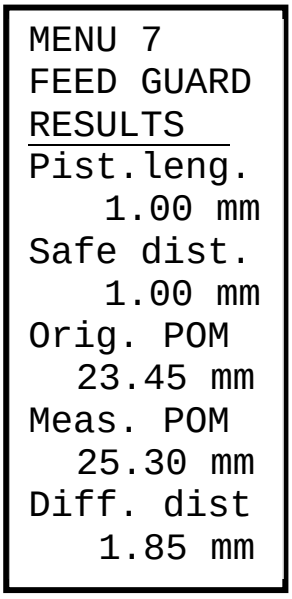
Use the ”↑” and ”↓” buttons to select a function and then press ENTER. The bottom line will then be displayed in reversed video, indicating that the value can be changed.
Now change the value with the ”↑” and ”↓” buttons, and press ENTER again to set the value.
When exit this routine, an additional question will be asked if to save the changed settings.

“PIST.LENG.” Sets the rotor movement caused by a release of the feed guard piston value. Max: 5.00, min: 0.00, default: 1.00, step: 0.10 mm.

”SAFE DIST.” Sets the safe distance for the rotor. The total feed guard movement for the rotor is the safe distance added with the piston length. It is normally set to the same value as the ”PIST.LENG” parameter. Max: 5.00, min: 0.20, default: 1.00, step: 0.10 mm.

”TIMEOUT”. The timeout sets the total time before the FeedGuard retraction must be completed. If the time has elapsed, without occurrence of the feed guard contact, a timeout alarm is generated. Max: 60, min: 5, default: 10, step: 1 s.

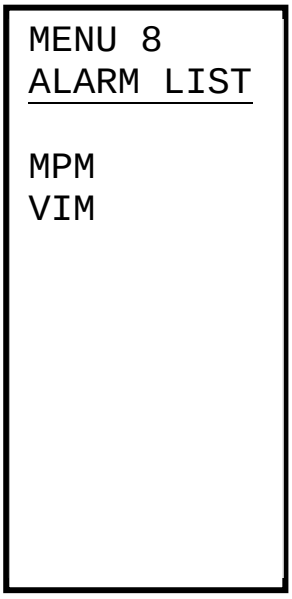
9. FEEDGUARD RESULT



MENU Return to MAIN MENU
↑ No function
→ No function
↓ No function
ENT Return to MAIN MENU

This menu displays the results of the last feed guard retraction.
Pist.leng. is the piston length setting.
Safe dist. is the set safe distance setting.
Orig. POM is the original rotor position value before the Feed Guard Reset signal was activated.
Meas. POM is the rotor position value after a completed Feed Guard Retraction.
Diff.dist is the calculated difference between the "Orig. POM" and the "Meas. POM".

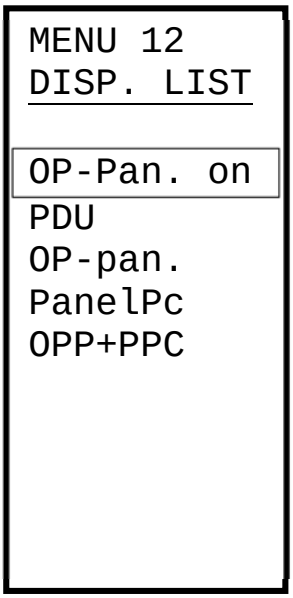
10. ALARMLIST



MENU Return to MAIN MENU
↑ No function
→ No function
↓ No function
ENT Return to MAIN MENU

This menu displays units that are confirmed as faulted. It also displays units that become faulted when being in this menu. These units are included to the list without any confirmation. If a unit is repaired or replaced, it disappears from the list.

11. DISPLAY



MENU Return to MAIN MENU
↑ Move marker up
→ Activate
↓ Move marker down
ENTER Save setting

The function is used to select the display unit to the RMS system.
"on" indicates the active display unit.
Move the marker (white text on dark bottom) with the UP- och DOWN-buttons.
Activate the selected display with the RIGHT ARROW button.
Push ENTER to save the setting and return to the previous menu.

12. CONTACT

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