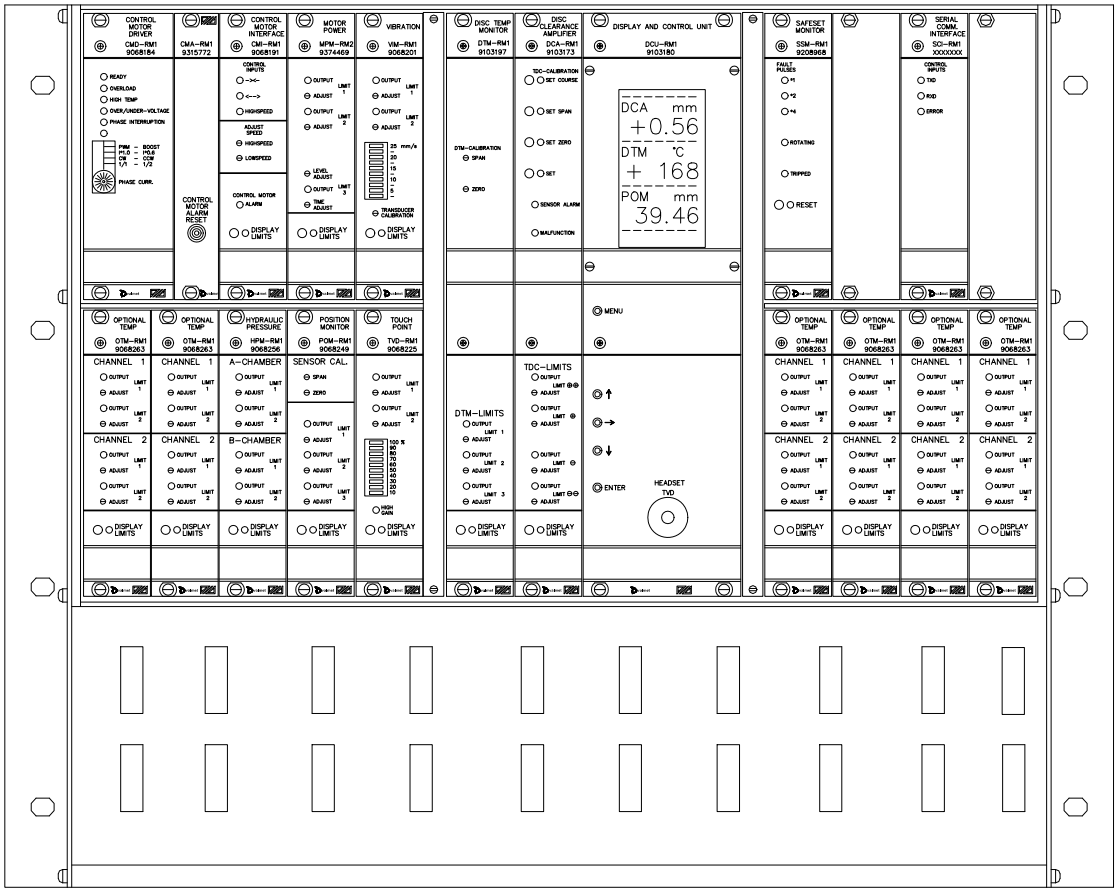
dametric

RMS–SD1

VAL0123043 / SKC9103166



REFINER MONITOR SYSTEM – SD

MANUAL

Valmet

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1. TECHNICAL SPECIFICATION

System voltage:	+24 Vdc, +/-10%, max 2.5 A
Operating temperature:	0 - 55 ºC
Storage temperature:	-40 to +70 ºC
Air humidity:	F according to DIN 40 040 (15% to 95% not condensing)
Protection:	IP00 (no protection against dust or water)
Mounting:	Mounting with 4 pcs of M6 screws to vertical mounting plate in a protecting cabinet
Digital outputs:	Voltage, 24Vdc
Type:	Active high (PNP) output from +24 V system voltage
Isolation:	500V, galvanic isolated from the respective unit
Load:	Max 50mA
Digital inputs:	Voltage, 24Vdc
Type:	Active high with resistor to 0V system voltage
Isolation:	500 V, galvanic isolated from the respective unit
Impedance:	5 kΩ
Trip voltage:	12 ± 5 V
Analog outputs:	Current, 4-20 mA
Isolation:	500V, galvanic isolated
Load:	Max 800 Ω
Analog inputs:	Current, 4-20 mA
Isolation:	± 200 V relative respective units
Impedance:	Max 200 Ω
Connecting cables:	Detachable screw connectors, max 2.5mm2 cable area Cable shields is connected direct to the ground bar
Grounding:	The rack is grounded through the ground cable
CE-approval:	According to EN 50081-2:1993, EN 50082-2:1995, 89/336/EEC Test report: Enator TR976011

2. UNITS

Funktion		**Dametric-no.**	**VAL-no.**	**SKC-no.**
Rack		RMS-SD1	0123043	9103166
Display and Control Unit		DCU-RM1	0100517	9103180
Disc Clearance Amplifier		DCA-RM1	0122833	9103173
Disc Temp Monitor		DTM-RM1 (TDC)	0122841	9103197
	or	ACM-RM1 (AGS)	0196330	
Control Motor Driver		CMD-RM2	0173903	9101601
Control Motor Interface		CMI-RM1	0122828	9068191
Vibration Monitor		VIM-RM1	0123136	9068201
Motor Power Monitor		MPM-RM1	0122987	9068218
	or	MPM-RM2	0122979	9374469
Touch Point Vib. Detector		TVD-RM1	0100516	9068225
Position Monitor		POM-RM1	0123032	9068249
Hydraulic Pressure Mon.		HPM-RM1	0122850	9068256
Optional Temp Monitor		OTM-RM1	0122982	9068263
Safeset Monitor		SSM-RM1	0123053	9208968

3. DESCRIPTION OF THE UNITS

RMS-SD1	**Rack RMS-SD**
Power supply :	24 Vdc, max 4A (depending on included units), from an external power unit
Internal connectors:	32-pole and 64-pole pcb-connectors type DIN-C, for the internal units
External connectors:	4, 6, 8 and 12-pole screw connectors for external signals

DCU-RM1	**Display and Control Unit**
Function:	Display for internal units, Disc clearance Controller
Input:	See separate manual
Output:	See separate manual

DCA-RM1	**Disc Clearance Amplifier**
Function:	Measures the True Disc Clearance. 2 units in the rack, conical and flat-zone.
Digital inputs:	DCA-calibration
Input:	TDC-sensor
Digital outputs:	Limit + +, Limit +, Limit - , Limit - -, Malfunction Alarm, Sensor Alarm
Analog output:	4-20 mA
Cable:	K-TDC25, 7-lead cable +double shield, 0.75 mm^2, 25m
and	KB-02, Connection Box
and	K-GTS, 7-pole connector, 7-lead cable +shield, 0.75 mm^2, 25m

DTM-RM1	**Disc Temperature Monitor (TDC)**
ACM-RM1	**AGS Control Module (AGS)**
Function:	Measures the disc temperature. 2 units in the rack, conical and flat-zone
Input:	TDC-sensor
Digital output:	Limit 1, Limit 2, Limit 3
Analog output:	4-20 mA

CMD-RM2	**Control Motor Driver (delivered from Oct. 2004)**
Function:	Current driver for stepping motor controlling the rotor position
Power supply:	24-28 Vdc, 2.5A
Input:	Control signals from the CMI-RM1 unit
Output:	Drive currents for 2-phase electric stepping motor
Cable:	4*1.5 mm^2, 25 m

CMI-RM1	**Control Motor Interface**
Function:	Converts control signals from the PLC-system to clock- and direction signals to the CMD-RM1/CMD-RM2 unit
Digital inputs:	Plates Together, Plates Apart, High speed and Holding torque
Digital Outputs:	Control motor alarm

VIM-RM1	**Vibration Monitor**
Function:	Measure the refiner vibration through an accelerometer transducer
Transducer:	Accelerometer 1 to 6000 Hz
Digital outputs:	Limit 1, Limit 2
Analog output 1:	4-20 mA
Display:	Led ramp in the front of the unit, 0-25 mm/s, 10 LED's
Cable:	K-VIMS25, 2-pole connector, 4-lead

MPM-RM1	**Motor Power Monitor**
or MPM-RM2	**Motor Power Monitor**
Function:	Monitor the current signal indicating the main motor load.
Digital Outputs:	Limit 1, Limit 2, Limit 3 (only on MPM-RM2)
Analog input:	4-20 mA
Analog output:	4-20 mA

TVD-RM1	**Touchpoint Vibration Detector**
Function:	Measure the touch point vibration through an accelerometer transducer.
Digital input:	Low gain
Digital outputs:	Limit 1, Limit 2
Transducer:	TVD-T1, TVD-T2 or TVD-T2S
Analog output 1:	4-20 mA
Analog output 2:	Audio signal to headset.
Analog output 3:	Spare.
Display:	Led ramp in the front of the unit, 0-100%, 10 leds.
Cable:	K-TVDS25, 4-pole connector, 4-lead cable +shield, 0.25 mm^2, 25m

POM-RM1	**Position Monitor**
Function:	Measures the rotor or stator position through an LVDT-transducer.
Digital outputs:	Limit 1, Limit 2, Limit 3
Transducer:	POT-50
Analog output:	4-20 mA
Cable:	K-POT25, 7-pole connector, 7-lead cable +shield, 0.25 mm^2, 25m
HPM-RM1	**Hydraulic Pressure Monitor**
Function:	Measures the A- and B-chamber force through pressure transducers
Transducers:	2-wire Pressure transducer 4-20 mA
Digital outputs:	A-Limit 1, A-Limit 2, B-Limit 1, B-Limit 2
Analog outputs:	A: 4-20 mA, B: 4-20 mA

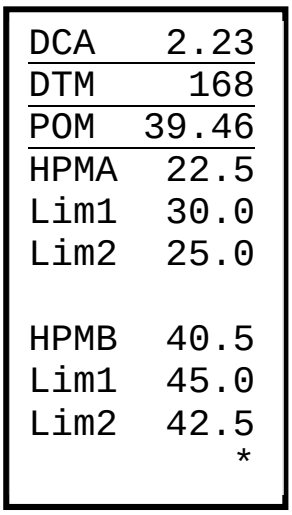
OTM-RM1	**Optional Temp Monitor**
Function:	Measures the temperature through PT100 sensors, 2 channels The rack can include up to 6 units.
Transducers:	2 each 3-wire PT100 sensors
Digital outputs:	CH1: Limit 1, Limit 2, CH2: Limit 1, Limit 2
Analog outputs:	CH1: 4-20 mA, CH2:4-20 mA

SSM-RM1	**Safeset Monitor**
Function:	Supervision of the Safeset clutch
Transducers:	2 inductive transducers, IG-30
Digital outputs:	Rotating, Tripped
Digital inputs:	Reset
Cable:	K-AT10, 6-pole connector, 4-lead cable +shield, 0.25 mm^2, 25m
and	KB-01 Connection Box

4. PRINCIPAL OF ADJUSTMENT

See the calibration manual (CAL-SD) for a detailed description.

- The adjustment of the alarm limits is done on the each unit.
- The read-out of alarm limits and levels is displayed on the Display and Control Unit, DCU-RM1.
- The DCU-unit detects the type of unit that is activated, and monitors the appropriate channels and limits.
- The unit is selected by the push-button ”DISPLAY LIMITS” on the desired unit.



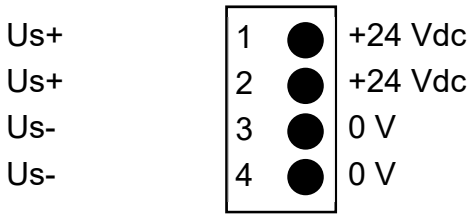
MENU	**Return to NORMAL READOUT (The display returns automatically to the normal readout after app. 2 minutes)**
↑	**Not used**
→	**Disables the auto turn off function**
↓	**Not used**
ENT	**Not used**

Automatic turn-off function

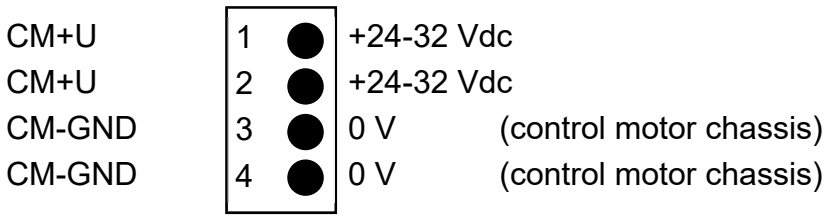
The display is automatically turned off approx. 2 minutes after the last activated ”DISPLAY LIMITS”.
To cancel this function, push "→" button on the DCU-unit.
Next activation of any of the ”DISPLAY LIMITS” reactivates the turn-off function.

5. CONNECTION DIAGRAM

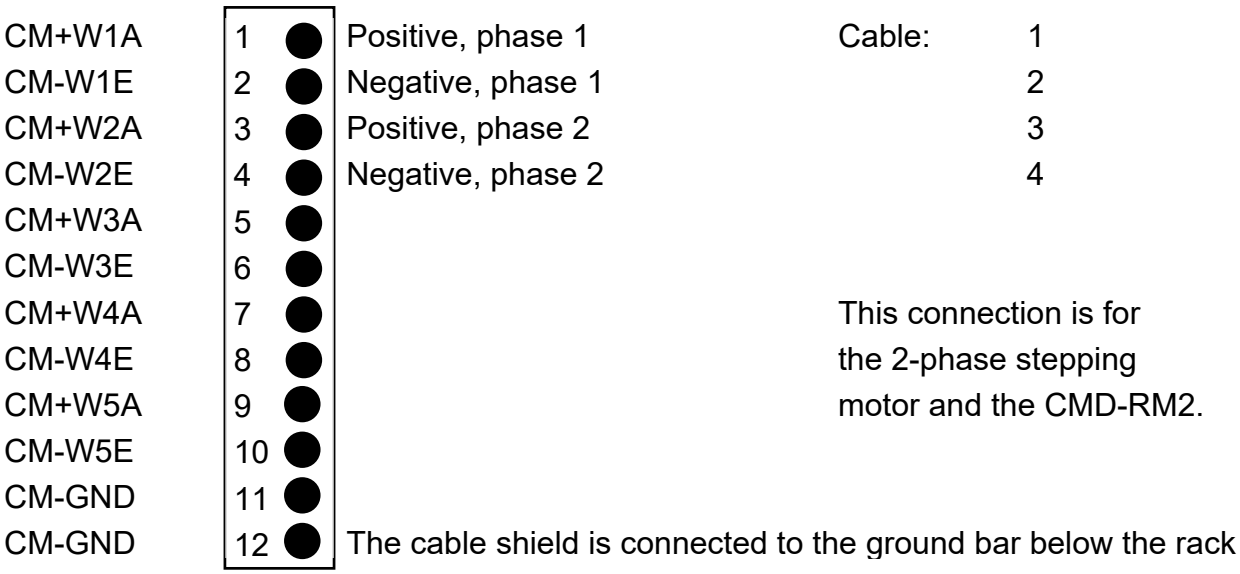
K1 RMS SYSTEM POWER



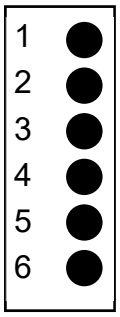
K2 CONTROL MOTOR POWER



K3 CONTROL MOTOR DRIVER **Drive currents to the control motor**

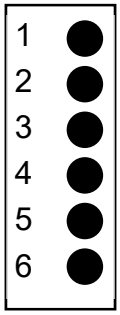


K4 CONTROL MOTOR INTERFACE, Digital inputs and outputs



DI+CMTO	1	Digital input, Plates together	PLC
DI+CMAP	2	Digital input, Plates apart	PLC
DI+CMHS	3	Digital input, High Speed	PLC
DI+CMHT	4	Digital input, Holding torque	PLC
DO+CMAL	5	Digital output, Alarm	PLC
DO+CM	6	Digital output, Spare	PLC

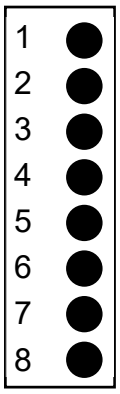
K5A OPTIONAL TEMP MONITOR 1, Transducer signals



T+OTM11	1	Transducer channel 11, positive
T-OTM11	2	Transducer channel 11, compensation
TS-OTM11	3	Transducer channel 11, negative
T+OTM12	4	Transducer channel 12, positive
T-OTM12	5	Transducer channel 12, compensation
TS-OTM12	6	Transducer channel 12, negative

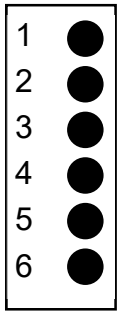
The cable shield is connected to the ground bar below the rack

K5B OPTIONAL TEMP MONITOR 1, Analog outputs, Digital outputs



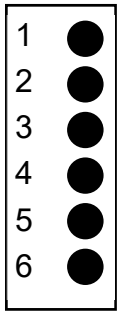
AO+OTM11	1	Analog output, 11, 4-20 mA	Instrum. system
AO-OTM11	2	Analog output, 11, 4-20 mA	Instrum. system
AO+OTM12	3	Analog output, 12, 4-20 mA	Instrum. system
AO-OTM12	4	Analog output, 12, 4-20 mA	Instrum. system
DO+OTM11	5	Digital output, Channel 11, Limit 1	PLC
DO+OTM12	6	Digital output, Channel 11, Limit 2	PLC
DO+OTM13	7	Digital output, Channel 12, Limit 1	PLC
DO+OTM14	8	Digital output, Channel 12, Limit 2	PLC

K6 MOTOR POWER MONITOR, Analog inputs and outputs,Dig. outputs



AI+MPM	1	Analog input, 4-20 mA	Instrum. system
AI-MPM	2	Analog input, 4-20 mA	Instrum. system
AO+MPM	3	Analog output, 4-20 mA	Instrum. system
AO-MPM	4	Analog output, 4-20 mA	Instrum. system
DO+MPM1	5	Digital output, Limit 1	PLC
DO+MPM2	6	Digital output, Limit 2	PLC

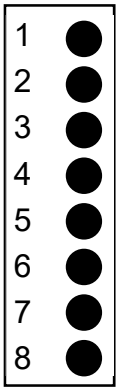
K7A OPTIONAL TEMP MONITOR 2, Transducer signals



T+OTM21	1	Transducer channel 21, positive
T-OTM21	2	Transducer channel 21, compensation
TS-OTM21	3	Transducer channel 21, negative
T+OTM22	4	Transducer channel 22, positive
T-OTM22	5	Transducer channel 22, compensation
TS-OTM22	6	Transducer channel 22, negative

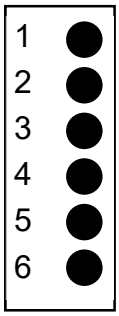
The cable shield is connected to the ground bar below the rack

K7B OPTIONAL TEMP MONITOR 2, Analog outputs, Digital outputs



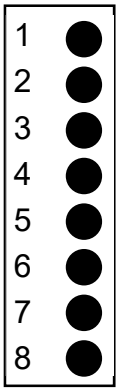
AO+OTM21	1	Analog output, 21, 4-20 mA	Instrum. system
AO-OTM21	2	Analog output, 21, 4-20 mA	Instrum. system
AO+OTM22	3	Analog output, 22, 4-20 mA	Instrum. system
AO-OTM22	4	Analog output, 22, 4-20 mA	Instrum. system
DO+OTM21	5	Digital output, Channel 21, Limit 1	PLC
DO+OTM22	6	Digital output, Channel 21, Limit 2	PLC
DO+OTM23	7	Digital output, Channel 22, Limit 1	PLC
DO+OTM24	8	Digital output, Channel 22, Limit 2	PLC

K8 HYDRAULIC OIL PRESSURE, Transducer signals



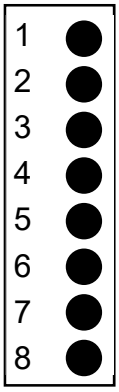
T+HPMA	1	Transducer A-chamber, positive
T-HPMA	2	Transducer A-chamber, negative
TS-HPMA	3	The cable shield is connected to the ground bar below the rack
T+HPMB	4	Transducer B-chamber, positive
T-HPMB	5	Transducer B-chamber, negative
TS-HPMB	6	The cable shield is connected to the ground bar below the rack

K9 HYDRAULIC OIL PRESSURE, Analog outputs, Digital outputs



AO+HPA	1	Analog output, A, 4-20 mA	Instrum. system
AO-HPA	2	Analog output, A, 4-20 mA	Instrum. system
AO+HPB	3	Analog output, B, 4-20 mA	Instrum. system
AO-HPB	4	Analog output, B, 4-20 mA	Instrum. system
DO+HPA1	5	Digital output, A, Limit 1	PLC
DO+HPA2	6	Digital output, A, Limit 2	PLC
DO+HPB1	7	Digital output, B, Limit 1	PLC
DO+HPB2	8	Digital output, B, Limit 2	PLC

K10 VIBRATION, Transducer signals, Analog outputs, Digital outputs



T+VIM	1	Transducer, positive	* :	white + brown
T-VIM	2	Transducer, negative	* :	green + yellow
TS-VIM	3	The cable shield is connected to the ground bar below the rack		
DO+MPM3	4	Digital output, Limit 3 MPM		PLC
AO+VIM	5	Analog output, 4-20 mA		Instrum. system
AO-VIM	6	Analog output, 4-20 mA		Instrum. system
DO+VIM1	7	Digital output, Limit 1		PLC
DO+VIM2	8	Digital output, Limit 2		PLC

* Cable K-VIM25, K-VIM25A or K-VIMS25

K11 ROTOR POSITION, Transducer signals, Analog outputs, Digital outputs

TI-POT1	1	Transducer, input positive	K-POT25:	white
TI+POT1	2	Transducer, input negative	K-POT25:	brown
TE-POT1	3	Transducer, input common	K-POT25:	green
TE+POT1	4	Transducer (not used)	K-POT25:	yellow
TR+POT1	5	Transducer, excitation positive	K-POT25:	grey
TM+POT1	6	Transducer, excitation negative	K-POT25:	rose
TS-POT1	7	The cable shield is connected to the ground bar below the rack		
AO+POM1	8	Analog output, 4-20 mA		Instrum. system
AO-POM1	9	Analog output, 4-20 mA		Instrum. system
DO+POM1	10	Digital output, Limit 1		PLC
DO+POM2	11	Digital output, Limit 2		PLC
DO+POM3	12	Digital output, Limit 3		PLC

K12 DISC TEMP MONITOR, Analog outputs, Digital outputs

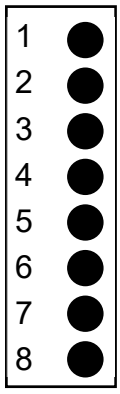
AO+DTM	1	Analog output, 4-20 mA	Instrum. system
AO-DTM	2	Analog output, 4-20 mA	Instrum. system
DO+DTM1	3	Digital output, Limit 1	PLC
DO+DTM2	4	Digital output, Limit 2	PLC
DO+DTM3	5	Digital output, Limit 3	PLC
	6		

K13 TOUCH POINT MONITOR, Transducer, Analog out, Dig. outputs and inputs

T+TVD	1	Transducer, positive	* :	white + brown
T-TVD	2	Transducer, negative	* :	green + yellow
TS-TVD	3	The cable shield is connected to the ground bar below the rack		
AO+TVDH	4	Analog output, Headset		Headset
AO-TVDH	5	Analog output, Headset		Headset
AO+TVDA	6	Analog output, Spare		Not used
AO-TVDA	7	Analog output, Spare		Not used
AO+TVD	8	Analog output, 4-20 mA		Instrum. system
AO-TVD	9	Analog output, 4-20 mA		Instrum. system
DO+TVD1	10	Digital output, Limit 1		PLC
DO+TVD2	11	Digital output, Limit 2		PLC
DI+LOGA	12	Digital input, Low gain		PLC

* Cable K-TVDT25 or K-TVDS25

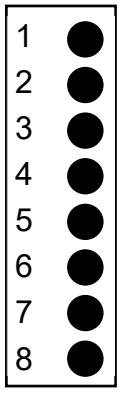
K14 DISC CLEARANCE AMPLIFIER, Transducer signals



TM+TDC	1	Transducer, measure positive	* :	white
TM-TDC	2	Transducer, measure negative	* :	brown
TR+TDC	3	Transducer, reference positive	* :	green
TR-TDC	4	Transducer, reference negative	* :	yellow
TE+TDC	5	Transducer, excitation positive	* :	grey
TE-TDC	6	Transducer, excitation negative	* :	rose
TP+TDC	7	Transducer, pt-100 excitation	* :	blue
TS-TDC	8	The cable shield is connected to the ground bar below the rack		

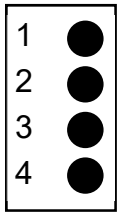
* : Cable K-F2T or K-TDC25

K15 DISC CLEARANCE AMPLIFIER, Analog outputs, Digital outputs



AO+DCA	1	Analog output, 4-20 mA	Instrum. system
AO-DCA	2	Analog output, 4-20 mA	Instrum. system
DO+DCA1	3	Digital output, Limit 1 (+ +)	PLC
DO+DCA2	4	Digital output, Limit 2 (+)	PLC
DO+DCA3	5	Digital output, Limit 3 (-)	PLC
DO+DCA4	6	Digital output, Limit 4 (- -)	PLC
DO+DCAMA	7	Digital output, Malfunction	PLC
DO+DCASA	8	Digital output, Sensor alarm	PLC

K18 DISC CLEARANCE AMPLIFIER, Digital inputs



DI+DCASC	1	Digital input, DCA Calibrate Coarse	PLC
DI+DCASS	2	Digital input, DCA Calibrate Span	PLC
DI+DCASZ	3	Digital input, DCA Calibrate Zero	PLC
DI+DCASE	4	Digital input, DCA Calibrate Set	PLC

K16 DISPLAY AND CONTROL UNIT, Analog and digital inputs and outputs

AI+DCRSV	1	Analog input, set limit, 4-20 mA	Instrum. system
AI-DCRSV	2	Analog input, set limit, 4-20 mA	Instrum. system
AO+DCRSV	3	Analog output, set limit, 4-20 mA	Instrum. system
AO-DCRSV	4	Analog output, set limit, 4-20 mA	Instrum. system
DI+DCRON	5	Digital input, Regulator ON	PLC
DI+DCRIN	6	Digital input, Increment set limit	PLC
DI+DCRDE	7	Digital input, Decrement set limit	PLC
DI+DCRST	8	Digital input, Copy DCA to set limit	PLC
DI+DCRAS	9	Digital input, External set limit	PLC
DO+DCRAL	10	Digital output, Regulator alarm	PLC
DO+DCURD	11	Digital output, Ready	PLC
DO+DCUAL	12	Digital output, Sum alarm	PLC

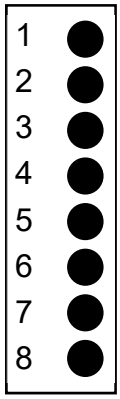
K17 DISPLAY AND CONTROL UNIT, Digital inputs and outputs

DI+TPAU	1	Digital input, Touch-point auto		PLC
DI+TPMA	2	Digital input, Touch-point manual		PLC
DO+TPAL	3	Digital output, Touch Point Alarm		PLC
DO+TPCO	4	Digital output, Touch Point Completed		PLC
DI+FGRE	5	Digital input, FeedGuard Reset		PLC
DO+FGCO	6	Digital output, FeedGuard Contact		PLC
DO+FGAL	7	Digital output, FeedGuard Alarm		PLC
ID+PDU1	8	Serial output, PDU-display	K-PDU3:	white
ID+PDU2	9	Serial input, PDU-display	K-PDU3:	brown
ID-PDU	10	Common, PDU-display	K-PDU3:	green+shield
U+PDU	11	Power supply, PDU-display	K-PDU3:	yellow
U-PDU	12	Power supply, PDU-display	K-PDU3:	grey

K19 DISPLAY AND CONTROL UNIT, Digital inputs and outputs

D+SYNC	1	Digital input/output, Rotor sync.	PLC
DI+DCU2	2	Digital input, Low A-chamber pressure	PLC
DI+DCU3	3	Digital input, not used	PLC
DI+DCU4	4	Digital input, not used	PLC
DI+DCU5	5	Digital input, not used	PLC
DI+DCU6	6	Digital input, not used	PLC
DO+DCU7	7	Digital output, AGS Calibrated	PLC
DO+DCU8	8	Digital output, not used	PLC

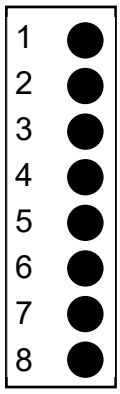
K20 SAFESET MONITOR, Transducer signals, Digital in and outputs



T1-SS	1	Transducer +	K-AT10: white
T2-SS	2	Transducer M, Motor side	K-AT10: brown
T3-SS	3	Transducer R, Refiner side	K-AT10: green
T4-SS	4	Transducer -	K-AT10: yellow
DO+SSSZ	5	Digital output, Not used	PLC
DO+SSRO	6	Digital output, Safeset rotating	PLC
DO+SSTR	7	Digital output, Safeset tripped	PLC
DI+SSRE	8	Digital input, Reset Safeset	PLC

The cable shield is connected to the ground bar below the rack

K21 Not used



T1-SS2	1
T2-SS2	2
T3-SS2	3
T4-SS2	4
DO+SSSZ2	5
DO+SSRO2	6
DO+SSTR2	7
DI+SSRE2	8

K22 SPARE, Transducer signals

T1-SD	1	Transducer 1
T2-SD	2	Transducer 2
T3-SD	3	Transducer 3
T4-SD	4	Transducer 4
T5-SD	5	Transducer 5
T6-SD	6	Transducer 6

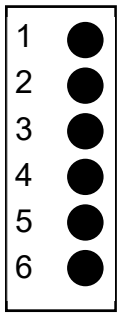
K23 SPARE, Analog and Digital outputs

AO+SD1	1	Analog output 1
AO-SD1	2	Analog output 1
AO+SD2	3	Analog output 2
AO-SD2	4	Analog output 2
DO+SD1	5	Digital output
DO+SD2	6	Digital output
DO+SD3	7	Digital output
DO+SD4	8	Digital output

K24 NOT USED.

T+VIM2	1
T-VIM2	2
TS-VIM2	3
AO+VIM2	4
AO-VIM2	5
DO+VIM21	6
DO+VIM22	7
	8

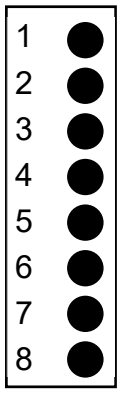
K31 OPTIONAL TEMP MONITOR 3, Transducer signals



T+OTM31	1	Transducer channel 31, positive
T-OTM31	2	Transducer channel 31, compensation
TS-OTM31	3	Transducer channel 31, negative
T+OTM32	4	Transducer channel 32, positive
T-OTM32	5	Transducer channel 32, compensation
TS-OTM32	6	Transducer channel 32, negative

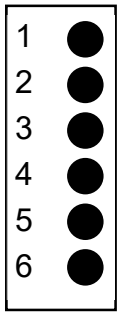
The cable shield is connected to the ground bar below the rack

K32 OPTIONAL TEMP MONITOR 3, Analog outputs, Digital outputs



AO+OTM31	1	Analog output, 31, 4-20 mA	Instrum. system
AO-OTM31	2	Analog output, 31, 4-20 mA	Instrum. system
AO+OTM32	3	Analog output, 32, 4-20 mA	Instrum. system
AO-OTM32	4	Analog output, 32, 4-20 mA	Instrum. system
DO+OTM31	5	Digital output, Channel 31, Limit 1	PLC
DO+OTM32	6	Digital output, Channel 31, Limit 2	PLC
DO+OTM33	7	Digital output, Channel 32, Limit 1	PLC
DO+OTM34	8	Digital output, Channel 32, Limit 2	PLC

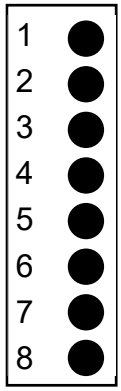
K41 OPTIONAL TEMP MONITOR 4, Transducer signals



T+OTM41	1	Transducer channel 41, positive
T-OTM41	2	Transducer channel 41, compensation
TS-OTM41	3	Transducer channel 41, negative
T+OTM42	4	Transducer channel 42, positive
T-OTM42	5	Transducer channel 42, compensation
TS-OTM42	6	Transducer channel 42, negative

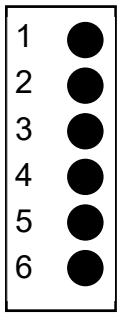
The cable shield is connected to the ground bar below the rack

K42 OPTIONAL TEMP MONITOR 4, Analog outputs, Digital outputs



AO+OTM41	1	Analog output, 41, 4-20 mA	Instrum. system
AO-OTM41	2	Analog output, 41, 4-20 mA	Instrum. system
AO+OTM42	3	Analog output, 42, 4-20 mA	Instrum. system
AO-OTM42	4	Analog output, 42, 4-20 mA	Instrum. system
DO+OTM41	5	Digital output, Channel 41, Limit 1	PLC
DO+OTM42	6	Digital output, Channel 41, Limit 2	PLC
DO+OTM43	7	Digital output, Channel 42, Limit 1	PLC
DO+OTM44	8	Digital output, Channel 42, Limit 2	PLC

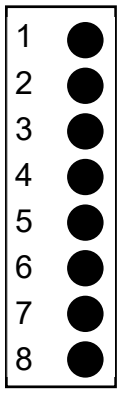
K51 OPTIONAL TEMP MONITOR 5, Transducer signals



T+OTM51	1	Transducer channel 51, positive
T-OTM51	2	Transducer channel 51, compensation
TS-OTM51	3	Transducer channel 51, negative
T+OTM52	4	Transducer channel 52, positive
T-OTM52	5	Transducer channel 52, compensation
TS-OTM52	6	Transducer channel 52, negative

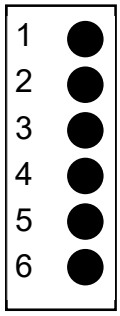
The cable shield is connected to the ground bar below the rack

K52 OPTIONAL TEMP MONITOR 5, Analog outputs, Digital outputs.



AO+OTM51	1	Analog output, 51, 4-20 mA	Instrum. system
AO-OTM51	2	Analog output, 51, 4-20 mA	Instrum. system
AO+OTM52	3	Analog output, 52, 4-20 mA	Instrum. system
AO-OTM52	4	Analog output, 52, 4-20 mA	Instrum. system
DO+OTM51	5	Digital output, Channel 51, Limit 1	PLC
DO+OTM52	6	Digital output, Channel 51, Limit 2	PLC
DO+OTM53	7	Digital output, Channel 52, Limit 1	PLC
DO+OTM54	8	Digital output, Channel 52, Limit 2	PLC

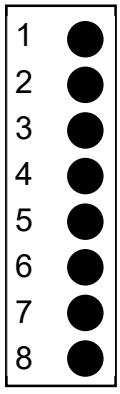
K61 OPTIONAL TEMP MONITOR 6, Transducer signals



T+OTM61	1	Transducer channel 61, positive
T-OTM61	2	Transducer channel 61, compensation
TS-OTM61	3	Transducer channel 61, negative
T+OTM62	4	Transducer channel 62, positive
T-OTM62	5	Transducer channel 62, compensation
TS-OTM62	6	Transducer channel 62, negative

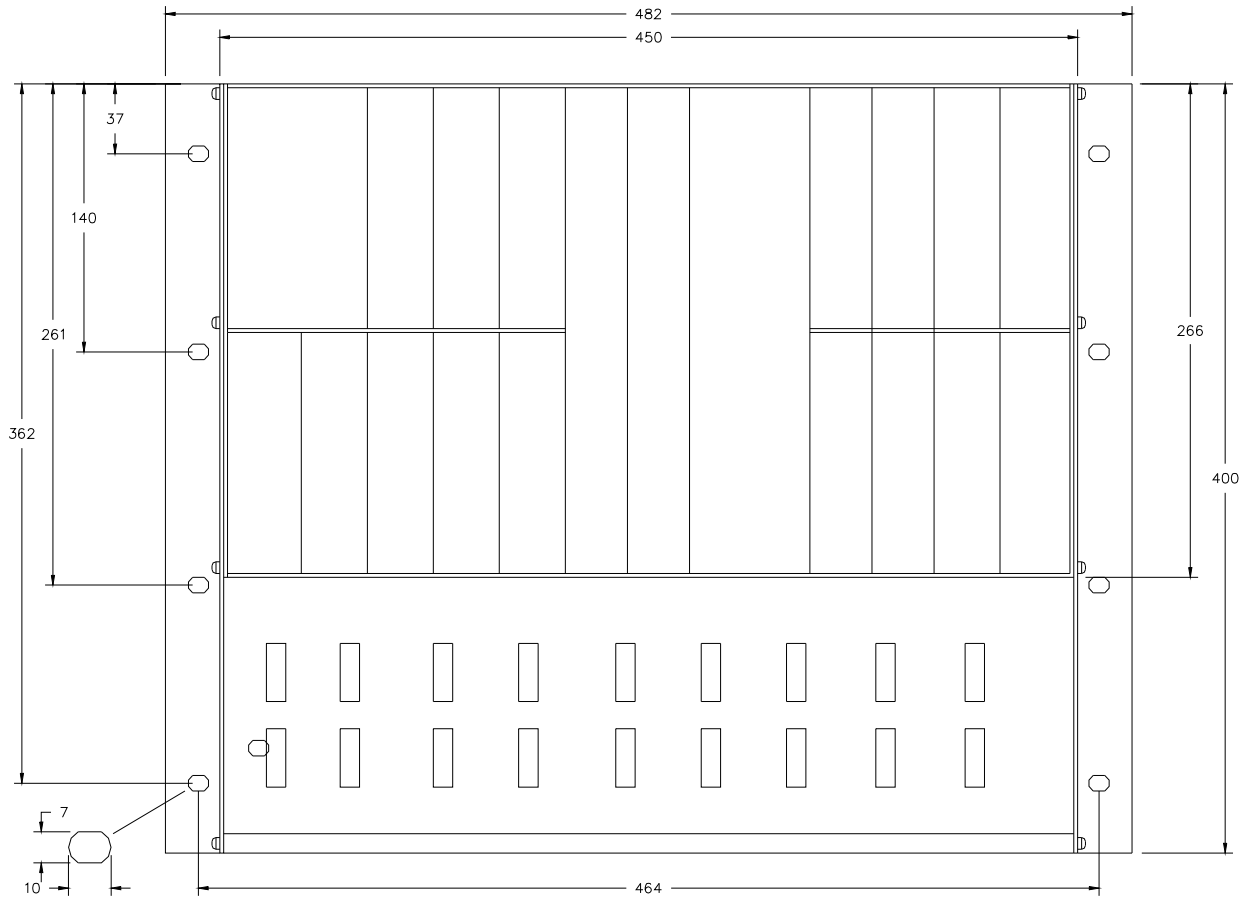
The cable shield is connected to the ground bar below the rack

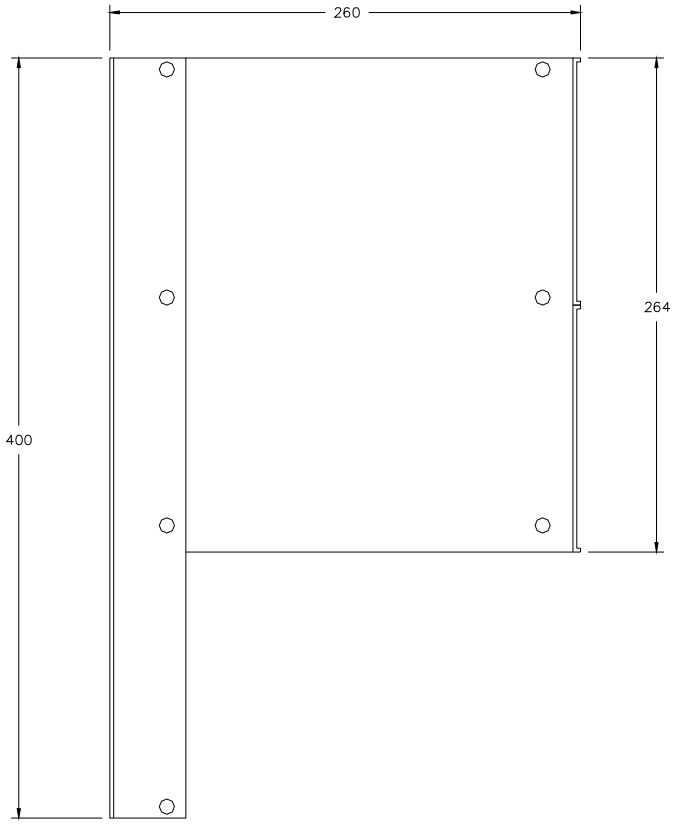
K62 OPTIONAL TEMP MONITOR 6, Analog outputs, Digital outputs



AO+OTM61	1	Analog output, 61, 4-20 mA	Instrum. system
AO-OTM61	2	Analog output, 61, 4-20 mA	Instrum. system
AO+OTM62	3	Analog output, 62, 4-20 mA	Instrum. system
AO-OTM62	4	Analog output, 62, 4-20 mA	Instrum. system
DO+OTM61	5	Digital output, Channel 61, Limit 1	PLC
DO+OTM62	6	Digital output, Channel 61, Limit 2	PLC
DO+OTM63	7	Digital output, Channel 62, Limit 1	PLC
DO+OTM64	8	Digital output, Channel 62, Limit 2	PLC

6. OUTLINE DRAWING




260
264
400

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