

# ***SKA ROTARY TABLE***

## ***DIRECT DRIVE SERVOMOTORS RATINGS AND SPECIFICATIONS***

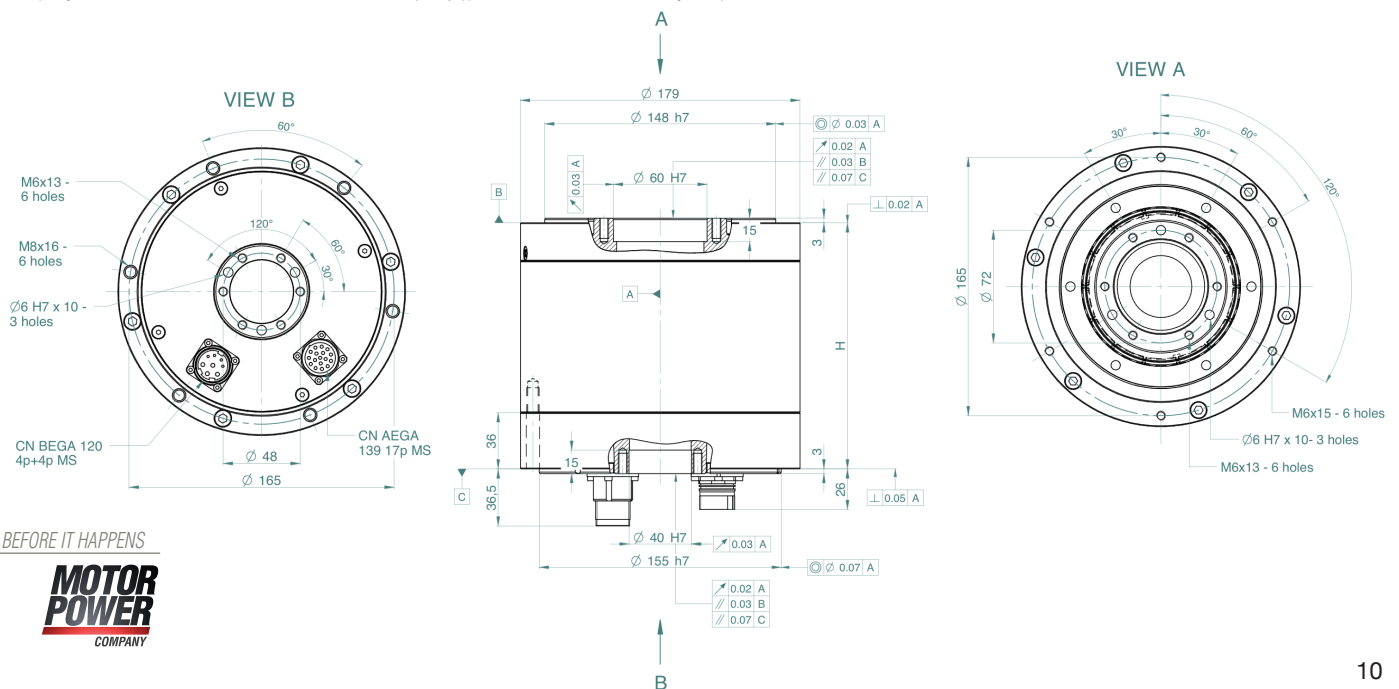
# SKA RT 148 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	20 to 80% RH (non condensing)
ENCLOSURE	Totally enclosed, self-cooled	POLES	14
ENCLOSURE RATING	IP 42 (standard)	THERMAL PROTECTION	PT 1000

## SKA RT 148.30 19    SKA RT 148.60 19    SKA RT 148.90 19    SKA RT 148.120 50

Stall torque	Nm	8	14	20	26
Peak torque	Nm	35	68	103	141
Rated torque	Nm	6,8	11,6	16,3	21
Rated voltage	Vac	230	230	230	230
Stall current	Arms	2,02	3,53	5,04	4,62
Peak current	Arms	10,80	20,0	32,0	31,0
Rated current	Arms	1,76	3,01	4,23	3,85
Rated speed	rpm	400	400	400	400
Maximum speed	rpm	600	600	600	600
Torque constant ± 5%	Nm/Arms	3,97	3,97	3,97	5,62
Voltage constant ± 5%	Vrms/krpm	240	240	240	340
Phase/phase resistance ± 5%	Ohm	6,40	2,90	1,88	2,80
Phase/phase inductance	mH	20	12,30	9,50	14,80
Electrical time constant	msec	3,1	4,2	5,1	5,3
Thermal resistance	°C/W	1,75	1,26	0,95	0,76
Mechanical time constant	ms	4,17	2,52	2,04	1,82
Max. theoretical acceleration	rad/s <sup>2</sup>	5109	7440	9019	10284
Rotor inertia	Kg cm <sup>2</sup>	68,5	91,4	114,2	137,1
Motor height H	mm	127,5	157,5	187,5	217,5
Motor weight	Kg	15,3	18,1	22	26,1
Radial load	N(@30rpm)	4680	4680	4680	4680
Axial load	N(@60rpm)	4370	4370	4370	4370
Tilt moment	N(@15rpm)	150	150	150	150

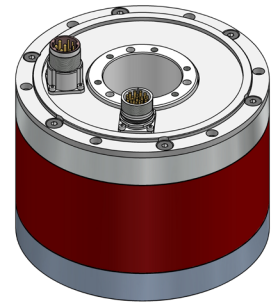
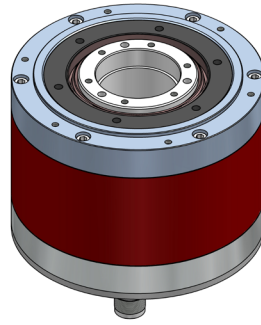
Values and torque/speed specifications here detailed are obtained with the SKA Rotary Table coupled to FLEXI PRO drive, with a coil temperature of 100°C. All others data are with a coil temperature of 25°C. Output continuous rating with 370x370x10mm heat sink flange coupling and with top flange not sealed. Tilt moment, radial and axial load must be understood as separately applied on the motors. For different loads configuration, please, contact us.



SEE IT BEFORE IT HAPPENS

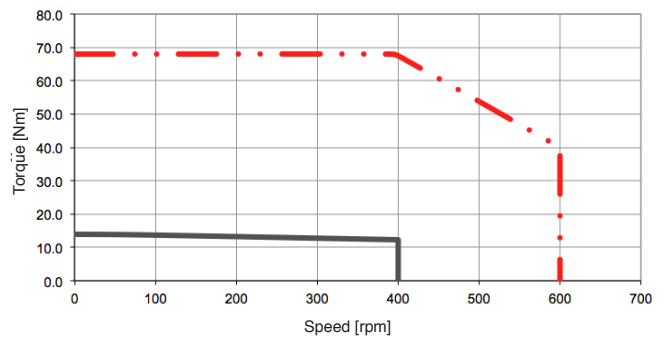
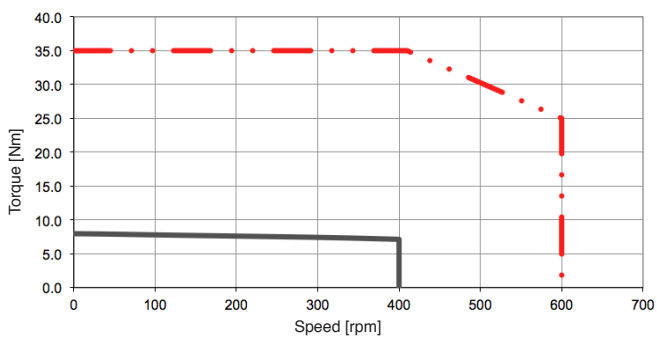


# SKA RT 148 TORQUE AND SPEED CHARTS



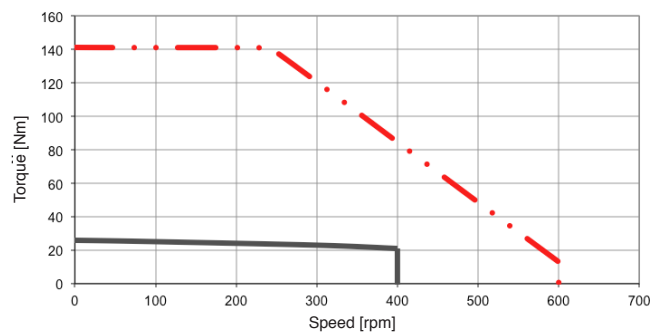
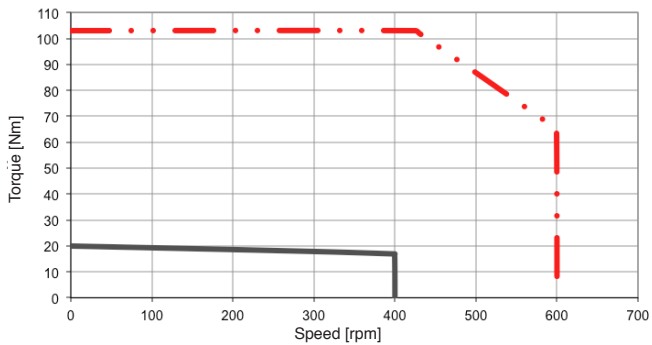
**SKA RT 148.30 19**

**SKA RT 148.60 19**



**SKA RT 148.90 19**

**SKA RT 148.120 50**



— CONTINUOUS DUTY @ RATED VOLTAGE  
 ..... INTERMITTENT DUTY @ RATED VOLTAGE

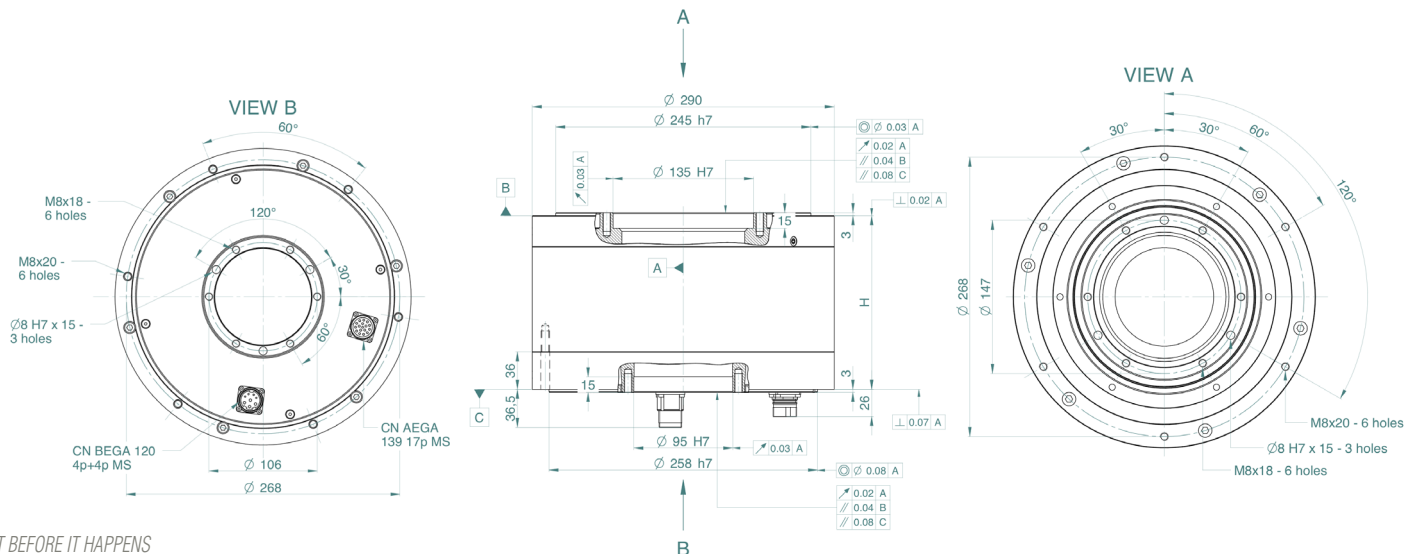
# SKA RT 245 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	20 to 80% RH (non condensing)
ENCLOSURE	Totally enclosed, self-cooled	POLES	28
ENCLOSURE RATING	IP 42 (standard)	THERMAL PROTECTION	PT 1000

## SKA RT 245.30 42    SKA RT 245.60 51    SKA RT 245.90 51    SKA RT 245.120 52    SKA RT 245.120 65

Stall torque	Nm	41	70	93	115	115
Peak torque	Nm	128	241	330	458	458
Rated torque	Nm	36	57	76	90	90
Rated voltage	Vac	400	400	400	400	400
Stall current	Arms	6,20	7,42	9,86	7,32	6,05
Peak current	Arms	22,90	30,30	40,0	34,50	28,50
Rated current	Arms	5,60	6,23	8,30	5,90	4,87
Rated speed	rpm	350	350	350	300	290
Maximum speed	rpm	500	500	500	380	348
Torque constant ± 5%	Nm/Arms	6,62	9,43	9,43	15,72	19,02
Voltage constant ± 5%	Vrms/krpm	400	570	570	950	1150
Phase/phase resistance ± 5%	Ohm	2,56	2,38	1,59	3,23	4,74
Phase/phase inductance	mH	15,80	20	15	31	45,43
Electrical time constant	msec	6,2	8,4	9,5	9,6	9,6
Thermal resistance	°C/W	0,46	0,35	0,29	0,26	0,26
Mechanical time constant	ms	4,76	2,61	2,08	1,78	1,78
Max. theoretical acceleration	rad/s <sup>2</sup>	2362	3702	4247	5066	5066
Rotor inertia	Kg cm <sup>2</sup>	542	651	777	904	904
Motor height H	mm	136,5	166,5	196,5	226,5	226,5
Motor weight	Kg	42,9	55,4	67,8	80,3	80,3
Radial load	N(@30rpm)	6050	6050	6050	6050	6050
Axial load	N(@60rpm)	5460	5460	5460	5460	5460
Tilt moment	Nm(@15rpm)	300	300	300	300	300

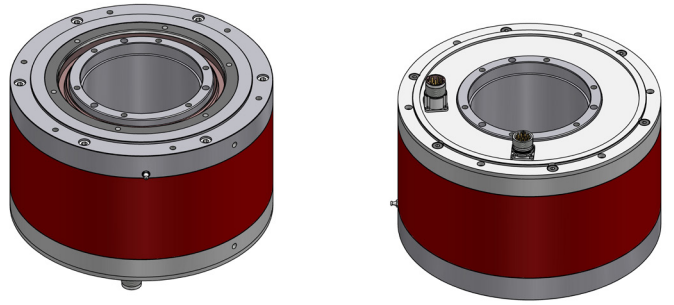
Values and torque/speed specifications here detailed are obtained with the SKA Rotary Table coupled to FLEXI PRO drive, with a coil temperature of 100°C. All others data are with a coil temperature of 25°C. Output continuous rating with 610x610x20mm heat sink flange coupling and with top flange not sealed. Tilt moment, radial and axial load must be understood as separately applied on the motors. For different loads configuration, please, contact us.



SEE IT BEFORE IT HAPPENS

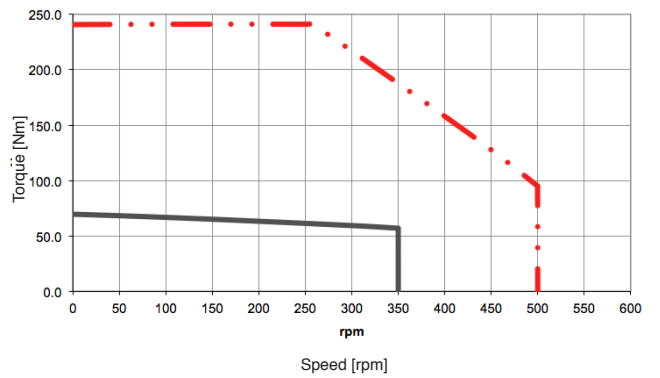
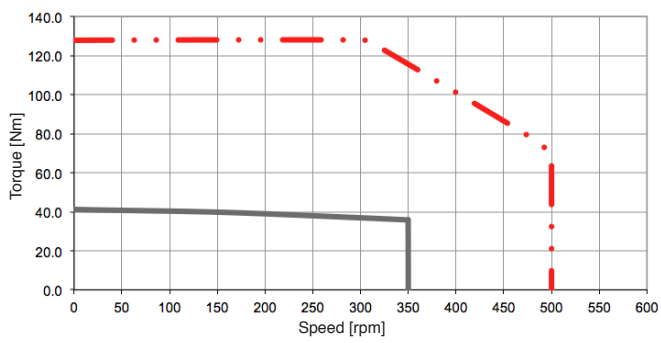
**MOTOR  
POWER**  
COMPANY

# SKA RT 245 TORQUE AND SPEED CHARTS



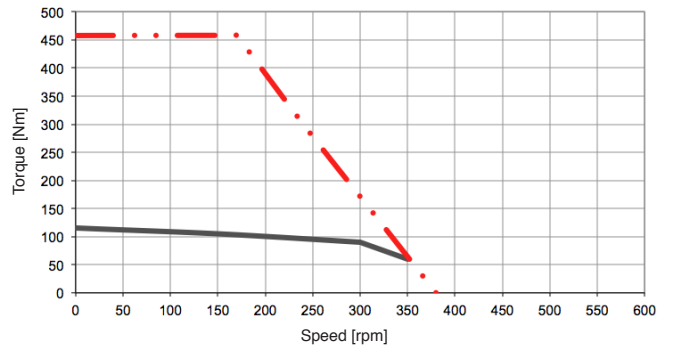
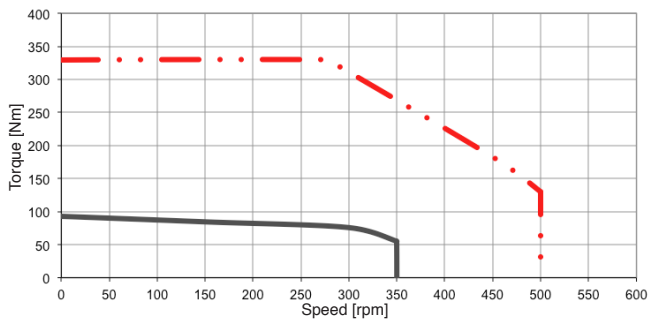
**SKA RT 245.30 42**

**SKA RT 245.60 51**

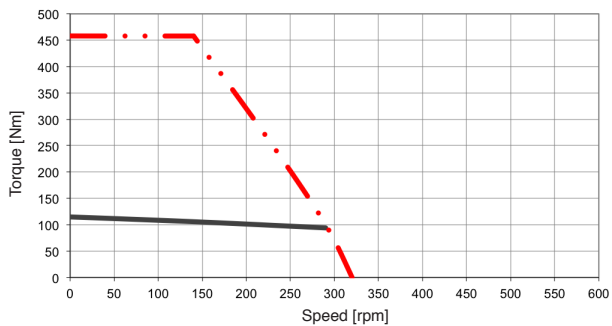


**SKA RT 245.90 51**

**SKA RT 245.120 52**



**SKA RT 245.120 65**



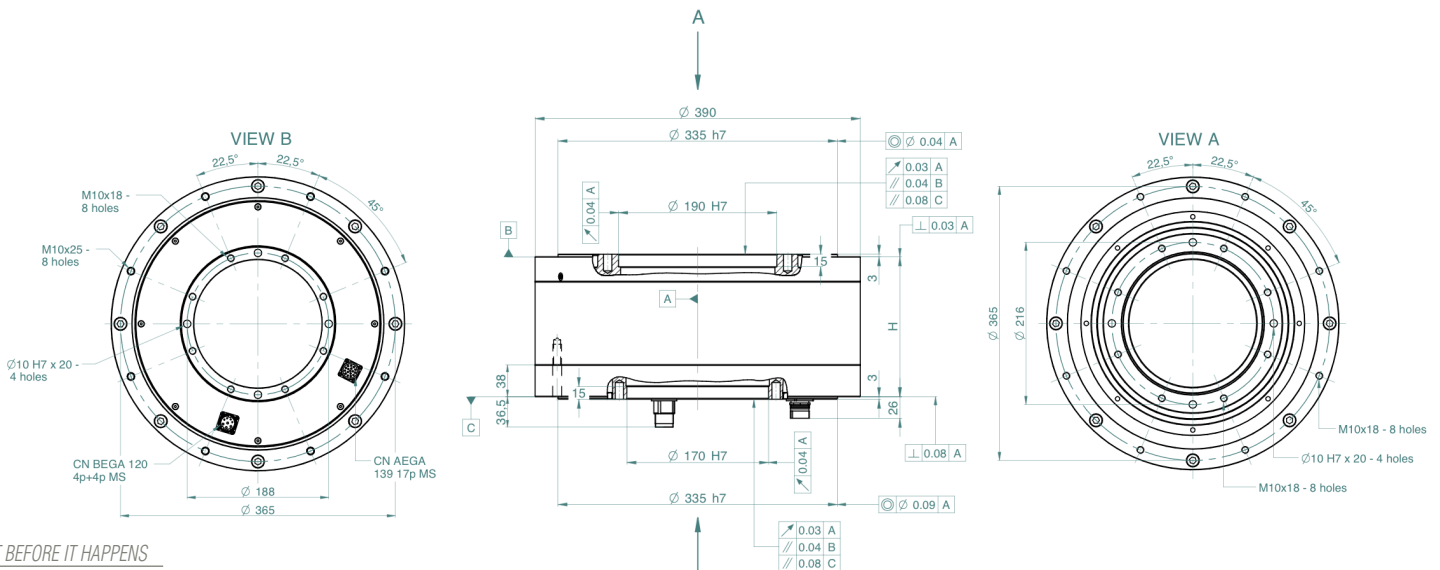
— CONTINUOUS DUTY @ RATED VOLTAGE  
 ..... INTERMITTENT DUTY @ RATED VOLTAGE

# SKA RT 335 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	20 to 80% RH (non condensing)
ENCLOSURE	Totally enclosed, self-cooled	POLES	42
ENCLOSURE RATING	IP 42 (standard)	THERMAL PROTECTION	PT 1000

		<b>SKA RT 335.30 51</b>	<b>SKA RT 335.30 65</b>	<b>SKA RT 335.60 65</b>	<b>SKA RT 335.90 65</b>	<b>SKA RT 335.120 65</b>	<b>SKA RT 335.150 54</b>	<b>SKA RT 335.150 65</b>
Stall torque	Nm	100	100	164	220	270	320	320
Peak torque	Nm	290	290	535	800	975	1200	1200
Rated torque	Nm	87	87	136	167	206	232	232
Rated voltage	Vac	400	400	400	400	400	400	400
Stall current	Arms	10,61	5,26	8,62	11,56	14,19	6,14	16,82
Peak current	Arms	36,70	18,19	33,04	50,06	57,82	25,56	70
Rated current	Arms	9,50	4,71	7,36	9,04	11,15	4,59	12,56
Rated speed	rpm	150	150	150	150	150	110	150
Maximum speed	rpm	200	200	200	200	200	127	200
Torque constant ± 5%	Nm/Arms	9,43	19,02	19,02	19,02	19,02	52,11	19,02
Voltage constant ± 5%	Vrms/krpm	570	1150	1150	1150	1150	3150	1150
Phase/phase resistance ±5%	Ohm	1,60	6,50	2,96	2,07	1,44	8,10	1,08
Phase/phase inductance	mH	10,66	43,39	27,16	19,71	15,77	90,03	12
Electrical time constant	msec	6,7	6,7	9,2	9,5	11,0	11,1	11,1
Thermal resistance	°C/W	0,25	0,25	0,21	0,16	0,16	0,15	0,15
Mechanical time constant	ms	7,68	7,68	4,45	3,78	3,10	2,67	2,67
Max. theoretical acceleration	rad/s <sup>2</sup>	1019	1019	1474	1814	1878	2008	2008
Rotor inertia	Kg cm <sup>2</sup>	2847	2847	3629	4411	5193	5975	5975
Motor height H	mm	138	138	168	198	228	258	258
Motor weight	Kg	73,1	73,1	94,1	115	136	157	157
Radial load	N(@30rpm)	6900	6900	6900	6900	6900	6900	6900
Axial load	N(@60rpm)	6300	6300	6300	6300	6300	6300	6300
Tilt moment	Nm(@15rpm)	600	600	600	600	600	600	600

Values and torque/speed specifications here detailed are obtained with the SKA Rotary Table coupled to FLEXI PRO drive, with a coil temperature of 100°C. All others data are with a coil temperature of 25°C. Output continuous rating with 840x840x30mm heat sink flange coupling and with top flange not sealed. Tilt moment, radial and axial load must be understood as separately applied on the motors. For different loads configuration, please, contact us.

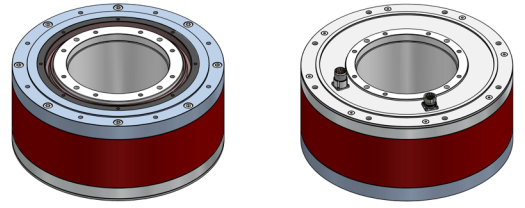
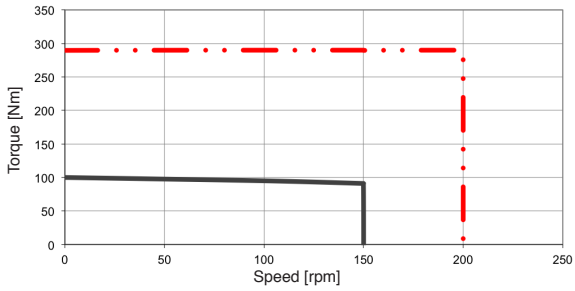


SEE IT BEFORE IT HAPPENS



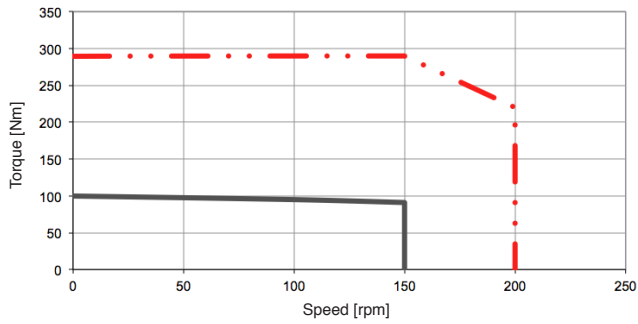
# SKA RT 335 TORQUE AND SPEED CHARTS

## SKA RT 335.30 51

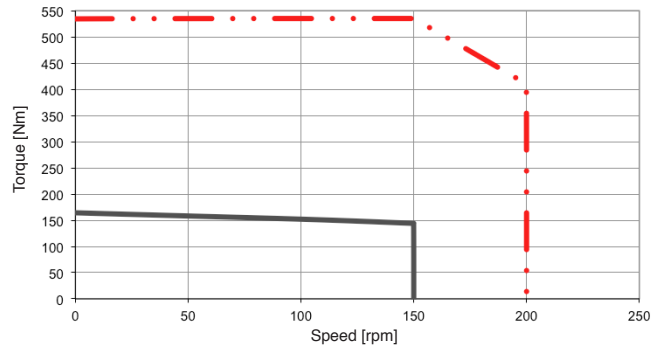


— CONTINUOUS DUTY @ RATED VOLTAGE  
 ..... INTERMITTENT DUTY @ RATED VOLTAGE

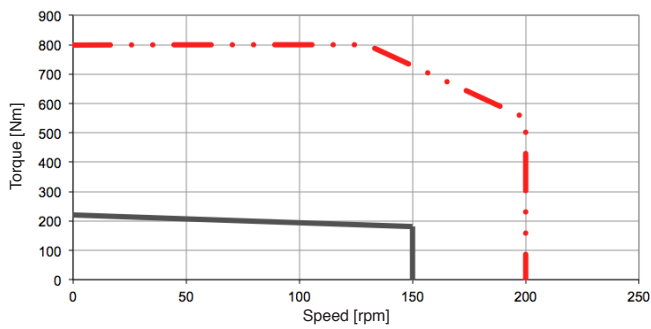
## SKA RT 335.30 65



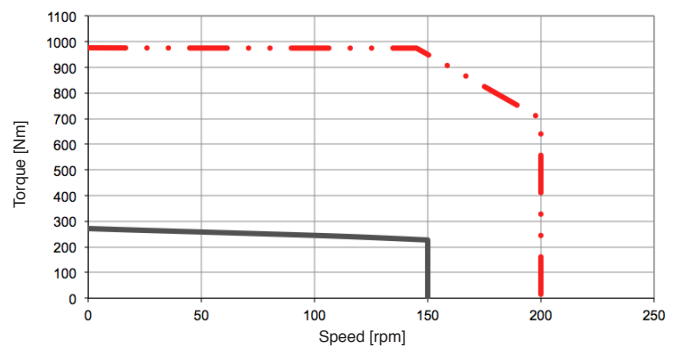
## SKA RT 335.60 65



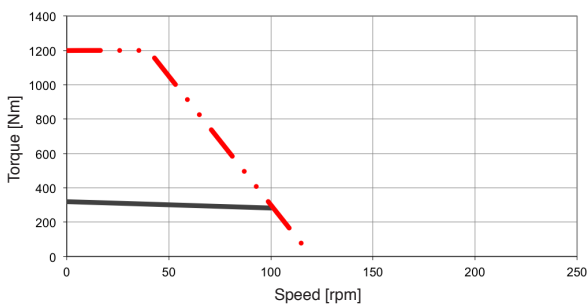
## SKA RT 335.90 65



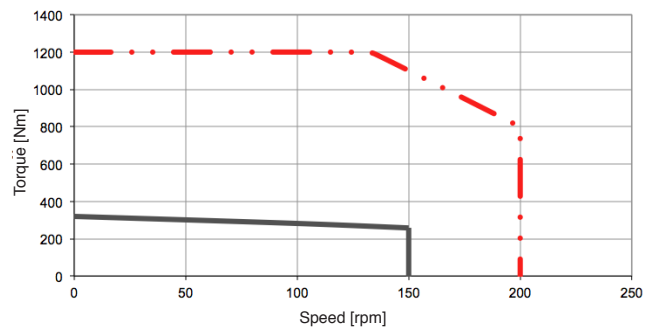
## SKA RT 335.120 65



## SKA RT 335.150 54



## SKA RT 335.150 65



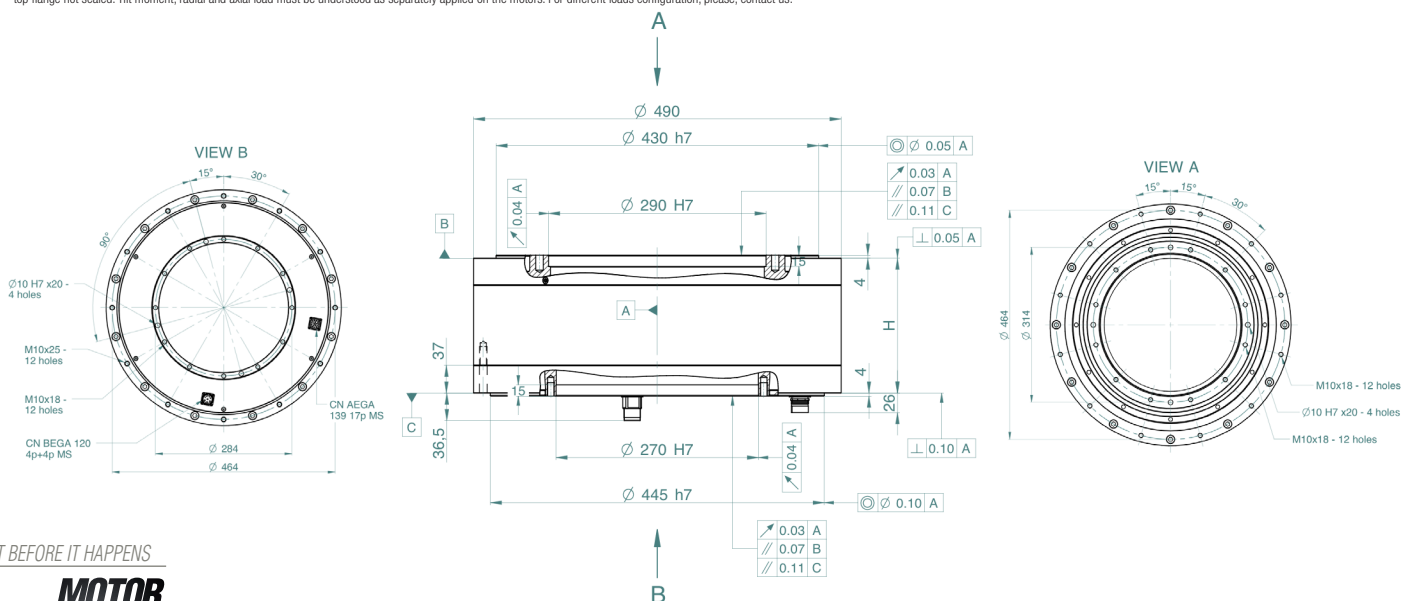
# SKA RT 430 RATINGS AND SPECIFICATIONS

TIME RATING	Continuous	AMBIENT TEMPERATURE	0 to 40 °C
INSULATION CLASS	F	AMBIENT HUMIDITY	20 to 80% RH (non condensing)
ENCLOSURE	Totally enclosed, self-cooled	POLES	56
ENCLOSURE RATING	IP 42 (standard)	THERMAL PROTECTION	PT 1000

	<b>SKA RT 430.30 56</b>	<b>SKA RT 430.60 52</b>	<b>SKA RT 430.60 56</b>	<b>SKA RT 430.90 55</b>	<b>SKA RT 430.90 56</b>	<b>SKA RT 430.120 53</b>	<b>SKA RT 430.150 66</b>	<b>SKA RT 430.180 54</b>
--	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	------------------------------	------------------------------	------------------------------

Stall torque	Nm	210	340	340	450	450	560	660	760
Peak torque	Nm	458	840	840	1200	1200	1600	1900	2400
Rated torque	Nm	175	268	268	332	332	450	520	680
Rated voltage	Vac	400	400	400	400	400	400	400	400
Stall current	Arms	9,07	21,63	14,68	4,77	19,43	17,82	17,73	14,58
Peak current	Arms	27	70	47,5	17,19	70	70	70	63,5
Rated current	Arms	7,78	17,56	11,92	3,63	14,77	14,75	14,39	13,44
Rated speed	rpm	100	100	100	60	100	100	100	100
Maximum speed	rpm	150	150	150	70	150	150	150	110
Torque constant ± 5%	Nm/Arms	23,16	15,72	23,16	94,29	23,16	31,43	37,22	52,11
Voltage constant ± 5%	Vrms/krpm	1400	950	1400	5700	1400	1900	2250	3150
Phase/phase resistance ± 5%	Ohm	3,25	0,68	1,47	16,16	0,98	1,37	1,64	2,50
Phase/phase inductance	mH	22,80	6,68	14,50	162	9,80	16	20	32
Electrical time constant	msec	7,0	9,9	9,9	10,0	10,1	11,7	12,2	12,8
Thermal resistance	°C/W	0,17	0,14	0,14	0,12	0,12	0,10	0,09	0,09
Mechanical time constant	ms	7,91	4,37	4,37	3,43	3,43	3,01	2,92	2,54
Max. theoretical acceleration	rad/s <sup>2</sup>	527	790	790	954	954	1102	1155	1305
Rotor inertia	Kg cm <sup>2</sup>	8698	10637	10637	12577	12577	14516	16455	18394
Motor height H	mm	150	180	180	210	210	240	270	300
Motor weight	kg	105,7	133,7	133,7	161,1	161,1	188,7	215,7	243,3
Radial load	N(@30rpm)	7700	7700	7700	7700	7700	7700	7700	7700
Axial load	N(@60rpm)	6700	6700	6700	6700	6700	6700	6700	6700
Tilt moment	Nm(@15rpm)	800	800	800	800	800	800	800	800

Values and torque/speed specifications here detailed are obtained with the SKA Rotary Table coupled to FLEXI PRO drive, with a coil temperature of 100°C. All others data are for coil a temperature of 25°C. Output continuous rating with 1000x1000x30mm heat sink flange coupling with top flange not sealed. Tilt moment, radial and axial load must be understood as separately applied on the motors. For different loads configuration, please, contact us.



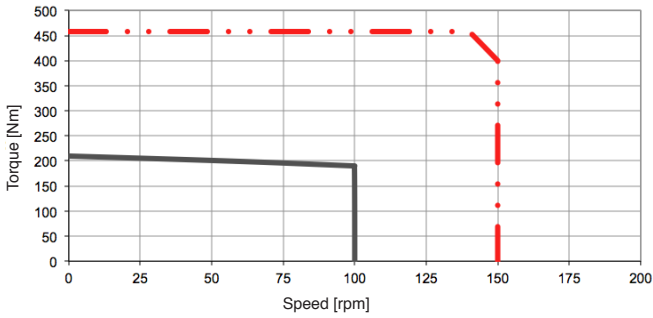
SEE IT BEFORE IT HAPPENS



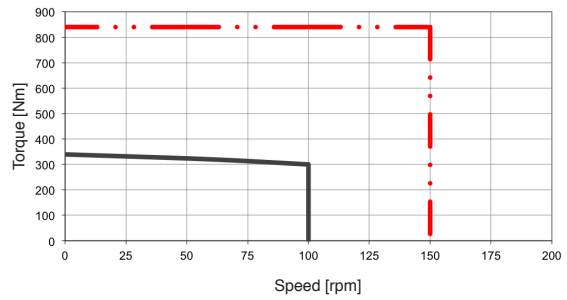


# SKA RT 430 TORQUE AND SPEED CHARTS

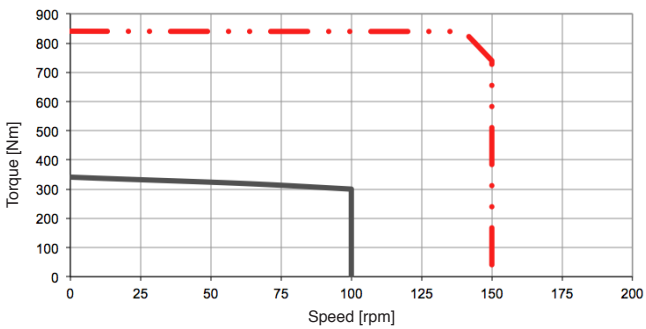
**SKA RT 430.30 56**



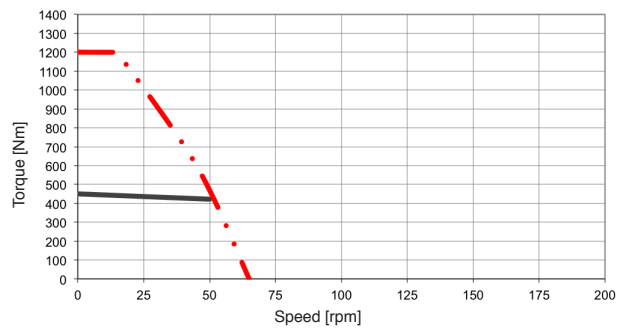
**SKA RT 430.60 52**



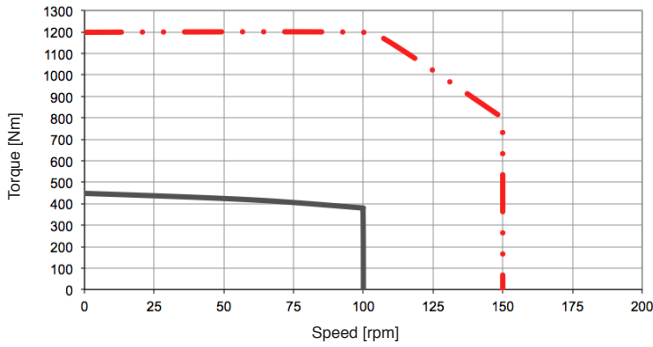
**SKA RT 430.60 56**



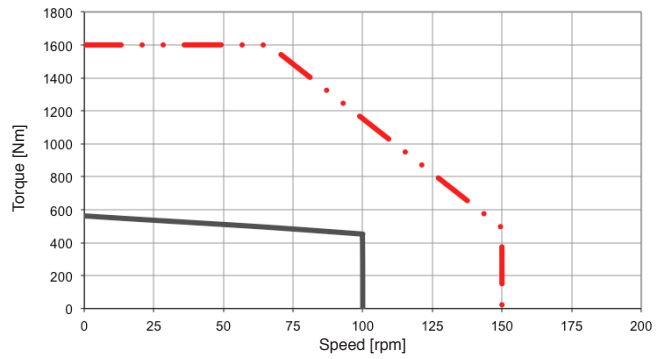
**SKA RT 430.90 55**



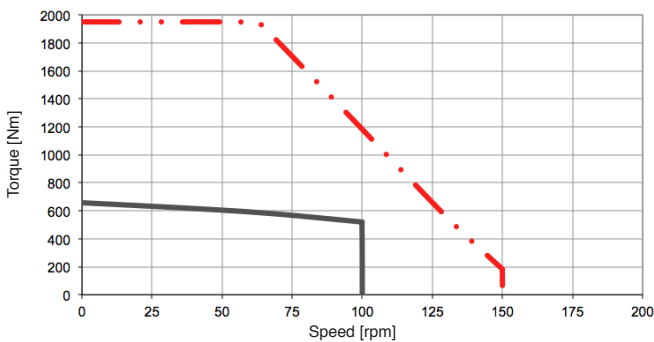
**SKA RT 430.90 56**



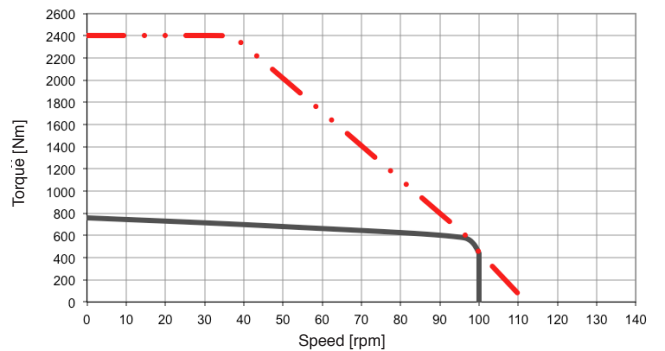
**SKA RT 430.120 53**



**SKA RT 430.150 66**



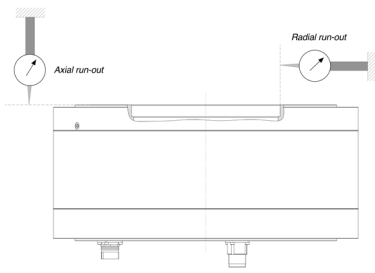
**SKA RT 430.180 54**



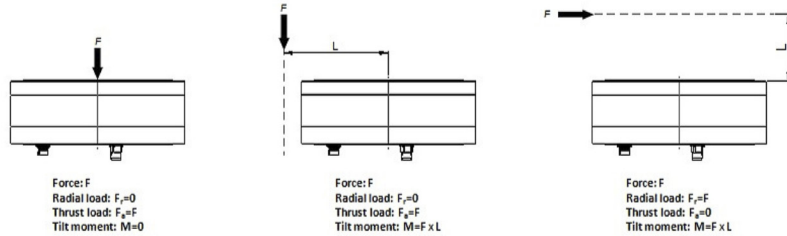
———— CONTINUOUS DUTY @ RATED VOLTAGE

..... INTERMITTENT DUTY @ RATED VOLTAGE

# RUNOUT AND LOAD



		SKA RT 148	SKA RT 245	SKA RT 335	SKA RT 430
Axial run-out	mm	0,02	0,02	0,03	0,03
Radial run-out	mm	0,03	0,03	0,04	0,04



# RELUBRICATION MAINTENANCE

The relubrication interval depends on the environment and the type of application. As standard the SKA RT bearing should be relubricated every 5000 hours of operation. The grease quantity (grams) is calculated by this formula:  
 $3720 * X$

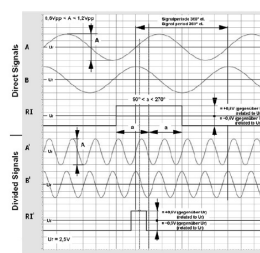
Where X depending in which time the bearing reach 5000h of operation.  
 X weeks = 0.002    X months = 0.003    X annual = 0.004    X two-year or three-year = 0.005  
 In case of 8 hours of operation per day, we have:  $3720 * 0.005 = 19$  grams

Relubrication must be applied using one of the two M6 radial holes on the front flange. The holes are closed by grub screw. The operator must remove the grain, and apply a M6 Grease nipple (not provided). Once the grease is applied, the grease nipple must be removed, and the hole must be close again with M6 grub screw.

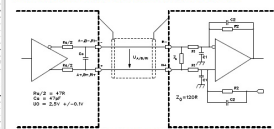
# FEEDBACK SPECIFICATIONS

INCREMENTAL ENCODER	Motor size	148	245	335	430	
	Nominal voltage	Vdc		4 to 7		
	Nominal current @5Vdc (without load)	mA		≤ 220		
	Maximum frequency	kHz		400		
	Output signal	Sine 1 Vpp				
	Zero impulse	pulse/turn	1			
	N° of periods per revolution	periods/rev	8192	16384	23040	32768
	Accuracy	arc sec	11	5,5	4	3
	Resolution	cpr	Function of interpolator			

Output signals sine, 1Vpp



Recommended configuration of the subsequent electronics



A, B, RI: direct signal output without dividing factor

A', B', RI': divided signal output

ABSOLUTE Endat ENCODER	Motor size	148	245	335	430	
	Nominal voltage	Vdc		3,6 to 14		
	Nominal current @5Vdc	mA		300		
	Maximum frequency	MHz		16		
	Absolute interface	Endat 2.2 22				
	Number of bits (singleturn)	22	23	23	24	
	Absolute resolution per revolution	increments/rev	4.194.304	8.388.608	8.388.608	16.777.216
	Accuracy	arc sec	3	1,5	1	1

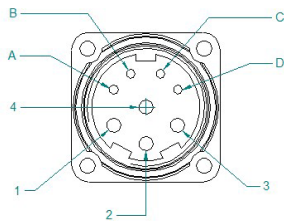
# WIRING MOTOR CONNECTIONS

## for incremental encoder

### CONNECTORS TYPE 19

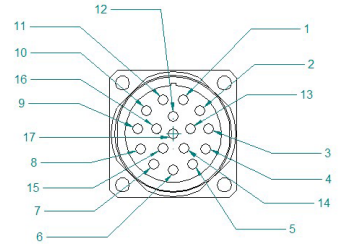
#### POWER CONNECTOR

PIN	FUNCTION
1	Phase U
2	PE
3	Phase W
4	Phase V
A	N.C.
B	N.C.
C	PT 1000 (+)
D	PT 1000 (-)



#### FEEDBACK CONNECTOR

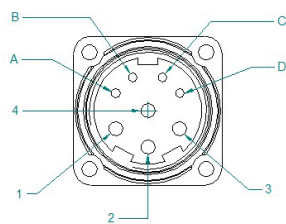
PIN	FEEDBACK FUNCTION
1	N.C.
2	N.C.
3	0 Vdc
4	+ 5Vdc
5	Sin/A
6	Sin A
7	Ref R -
8	Ref R +
9	N.C.
10	Shield
11	Cos/B
12	Cos B
13	+5Vdc **Sense
14	0Vdc **Sense
15	N.C.
16	Reserved: do not connect
17	Reserved: do not connect



### CONNECTORS TYPE 20

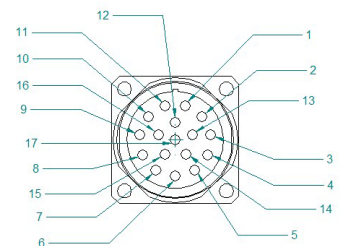
#### POWER CONNECTOR

PIN	FUNCTION
1	Phase U
2	PE
3	Phase W
4	Phase V
A	N.C.
B	N.C.
C	N.C.
D	N.C.



#### FEEDBACK CONNECTOR

PIN	FEEDBACK FUNCTION
1	PT 1000 (+)
2	PT 1000 (-)
3	0 Vdc
4	+ 5Vdc
5	Sin/A
6	Sin A
7	Ref R -
8	Ref R +
9	N.C.
10	Shield
11	Cos/B
12	Cos B
13	+5Vdc **Sense
14	0Vdc **Sense
15	N.C.
16	Reserved: do not connect
17	Reserved: do not connect



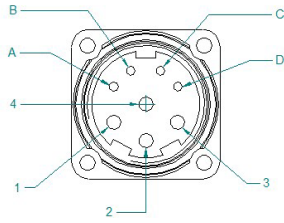
# WIRING MOTOR CONNECTIONS

## for absolute encoder

### CONNECTORS TYPE 19

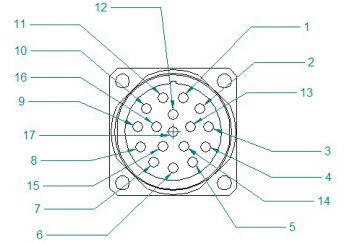
#### POWER CONNECTOR

PIN	FUNCTION
1	Phase U
2	PE
3	Phase W
4	Phase V
A	N.C.
B	N.C.
C	PT 1000 (+)
D	PT 1000 (-)



#### FEEDBACK CONNECTOR

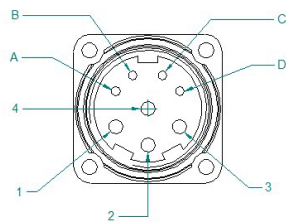
PIN	FEEDBACK FUNCTION
1	+ 5Vdc **Sense
2	N.C.
3	N.C.
4	0Vdc **Sense
5	N.C.
6	N.C.
7	+ 5Vdc
8	Clock +
9	Clock -
10	0Vdc
11	Shield
12	-
13	-
14	Data +
15	-
16	-
17	Data -



### CONNECTORS TYPE 20

#### POWER CONNECTOR

PIN	FUNCTION
1	Phase U
2	PE
3	Phase W
4	Phase V
A	N.C.
B	N.C.
C	N.C.
D	N.C.



#### FEEDBACK CONNECTOR

PIN	FEEDBACK FUNCTION
1	+ 5Vdc **Sense
2	PT 1000 (+)
3	PT 1000 (-)
4	0Vdc **Sense
5	N.C.
6	N.C.
7	+5Vdc
8	Clock +
9	Clock -
10	0Vdc
11	Shield
12	-
13	-
14	Data +
15	-
16	-
17	Data -

