



2.3.1.3. Electric motor drivers

CM 605 A - CM 605 B - CM 606 A - CM 606 B

Data sheets electric motor drivers for K 601 A/B - K 602 A/B.
THERMODYN reference document I 218 NTSH 100

VENDOR INFORMATION

COMPANY NAME THERMODYN DIVISION DE FRAMATOME

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VENDOR REF NUMBER 1X1264

VENDOR DOCUMENT NUMBER I218NTSH100 REV. 04

DOCUMENT TITLE DATA SHEETS, ELECTRIC MOTOR DRIVERS FOR K601A/B - K602A/B

PROJECT DOCUMENT N° DS.FF.22.26.8020

FROY INTEGRATION WORK ON TCP2

VENDOR DOCUMENT REVIEW

PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OF DESIGN DETAILS, CALCULATIONS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY VENDOR AND DOES NOT RELIEVE VENDOR FROM FULL COMPLIANCE WITH CONTRACTUAL OR OTHER OBLIGATIONS NOR DETRACT FROM ANY COMPANIES RIGHTS.

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- 2 REVISE AND RESUBMIT. INCORPORATE CHANGES INDICATED.
- 3 REVISE AND RESUBMIT. NOT ACCEPTED.
- 4 REVIEWED WITHOUT COMMENT. SUBMIT WITH FINAL DOCUMENTATION.

ENGINEERS SIGNATURE

[Signature] DATE 11/9/93

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FROY INTEGRATION WORK ON TCP2

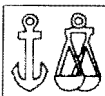
EQUIPMENT DESCRIPTION: PROCESS GAS COMPRESSORS

PKGE TAG NO: MA001 LOCATION: M35. I

VDRL CODES: C07

ITEM TAG Nos: CM 605 A/B - CM 606 A/B

P.O. NUMBER	SEQUENCE No:	REV.	VDRL CAT
PO-FF-22-26-1001	C0001	04	C07



DNV

VERITEC



1X126H ELF NORGE

SPECIFICATION N° I218NTSH100/04

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DATA-SHEETS

ELECTRIC MOTOR DRIVERS

For K601A/B and K602A/B

DATE	REV.	MODIFICATIONS	NOM/VISA REDACTEUR	NOM/VISA VERIFICATEUR	NOM/VISA APPROBATEUR
JUL.93	04	Up to date - V.T. comments dated 19/05/93	KJS	TUL	GRC
APR.93	03	Up to date - VT comments dated 22/2/93	KJS	TUL	GRC
FEB.93	02	Up to date - VT comments dated 14/1/93 (6 pages)	KJS	TUL	GRC
17/12/92	01	FIRST ISSUE - E.Motor data sheets (12 pages)	KJS		

10 000 000 110 001

DATA SHEET

Ref.No: DS-FF-22-23-0002

3-PHASE INDUCTION MOTOR

MANUFACTURER: A.B.B. DRIVES - FRANCE

TYPE/SIZE: RCPB 630 B.4

SERVICE: LP COMPRESSOR FROY GAS K 601 A/B

TAG No CM 605 A/B

Date effective: 02.04.92

Revision No.: 020

Date revised: 28.09.92

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- NOTES: 1. PURCHASER OR DRIVEN EQUIPMENT MANUFACTURER DATA TO BE COMPLETED BY PACKAGE MANUFACTURER
2. MOTOR MANUFACTURER DATA TO BE FILLED IN

GENERAL DATA

PURCHASER OR DRIVEN EQUIPMENT MANUFACTURER DATA

- 1. RATED VOLTAGE 5500 V 50 Hz
- 2. RATED SPEED 1482 RPM
- 3. DUTY TYPE CONTINUOUS
- 4. CONTINUOUS RATING 2850 kW
- 5. INTERMITTENT RATING N.A. kW

- 38. CROSS SECTION OF FIELD CABLE 2x2,5 mm²
- 39. OUTER SHEATH DIAMETER OF FIELD CABLE by VT mm²
- 40. CROSS SECTION OF HEATER CABLE 2x2,5+E mm²
- 41. OUTER SHEATH DIAMETER OF HEATING CABLE by VT mm²
- 42. MAINPOWER CABLE GLAND ENTRY 80 mm ISO
- 43. SPACE HEATER CABLE GLAND ENTRY mm ISO
- 44. D.P. SWITCH CABLE GLAND ENTRY N.A. mm ISO
- 45. TEMPERATURE SWITCH CABLE GLAND ENTRY N.A. mm ISO
- 46. AIR FLOW SWITCH CABLE GLAND ENTRY N.A. mm ISO
- 47. BLOWER FAN CABLE GLAND ENTRY N.A. mm ISO
- 48. **BLANKED CABLE PLATES FOR THE AUXILIARIES.**

CONSTRUCTION

- STANDARDS AND CODES IEC 34 AND NF C 5111
- 7. DEGREE OF PROTECTION IP55
- 8. INSULATION CLASS F ARMAT. FIELD
- 9. TEMPERATURE RISE 80 °C
- 10. COOLING METHOD WATER
- 11. Ex PROTECTION Ex p
- 12. TEMPERATURE CLASS T3
- 13. GAS GROUP IIA
- 14. PAINT COLOUR GREY RAL 7001

LOCATION

- 15. HAZARDOUS AREA CLASSIFICATION ZONE 2
- 16. AMBIENT TEMPERATURE MAX +22 MIN -10 °C

DRIVEN EQUIPMENT MECHANICAL DATA

- 17. DRIVEN EQUIPMENT TYPE GEAR AND CENT. COMPRESSOR
- 18. MAX POWER ABS. BY DRIVEN EQUIPMENT 2500 kW
- 19. STARTING TORQUE REQUIRED x 0,2 N.T.
- INERTIA OF DRIVEN EQUIPMENT AT RATED SPEED 10 383 kgm²
- MOUNTING ARRANGEMENT MOTOR/GEAR/COMP. ON SKID
- 22. DIRECTION OF ROTATION SEEN FROM DRIVING END
- 23. COUPLING FLEXIBOX CCW
- 24. THRUST DIRECTION OF DRIVEN EQUIPMENT ±
- 25. TRANSIT THRUST ±
- 26. PERMANENT THRUST ±
- 27. TYPE OF BEARING USED ON DRIVEN EQUIPMENT T.P. and sleeves
- 28. DUTY CYCLE CONTINUOUS
- 29. SPECIAL FEATURE N.A.

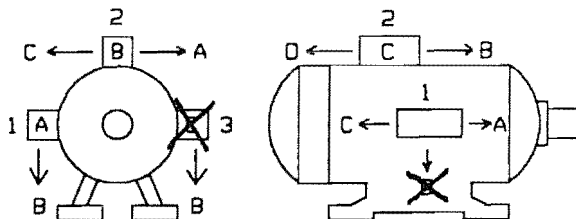
HEATING

- 30. SPACE HEATER REQUIRED YES YES/NO
- 31. SPACE HEATER VOLTAGE 220 V 50 Hz
- 32. SPACE HEATER ENCLOSURE EEx d

CABLE AND TERMINAL BOXES

- 33. TERMINAL BOXES PROTECTION & Ex CERTIF IP 56 /EXe
- CABLE GLAND TYPE CAPRI ADE 4F - N°15
- INCMMING CABLE TYPE RFOU 2x3x120+E mm²
- 35. CROSS SECTION OF POWER CABLE 120 mm²
- 37. OUTER SHEATH DIAMETER OF POWER CABLE 72 mm²

JUNCTION BOXES POSITION AND CABLES ENTRIES



EARTHING

- 49. EARTHING TERMINAL INTERNAL EXTERNAL
- 50. EARTHING TERMINAL CROSS SECTION * mm²
- 51. MAIN TERMINAL BOX EARTHING 10 mm INSIDE
- 52. AUX TERMINAL BOX EARTHING 2,2 mm INSIDE
- * Main terminal box = 52 mm²
- * Auxiliaries boxes = 4 mm²
- SPECIAL REQUIREMENTS
- 53. D.P. SWITCH VOLTAGE N.A.
- 54. D.P. SWITCH ENCLOSURE N.A.
- 55. TEMPERATURE SWITCH VOLTAGE N.A.
- 56. TEMPERATURE SWITCH ENCLOSURE N.A.
- 57. AIR FLOW SWITCH VOLTAGE N.A.
- 58. AIR FLOW SWITCH ENCLOSURE N.A.
- 59. TEMPERATURE SENSORS WINDINGS * YES (6)
- 60. TEMPERATURE SENSORS BEARINGS * YES (3/2/1/2)
- 61. BLOWER FAN VOLTAGE V Hz
- 62. NAMEPLATE S.S. INTERNAL/EXTERNAL
- 63. TEST YES ROUTING/COMPLETE

- FULL LOAD TEST FOR 1 MOTOR OF EACH TYPE (K601A/B and K602 A/B)

* - RTD'S PT 100Ω at 0°C

DATA SHEET

Ref.No.

DS-FF-22-23-0003

3-PHASE INDUCTION MOTOR

MANUFACTURER: A.B.B. DRIVES - FRANCE

TYPE/SIZE: RCPB 630 B.4

SERVICE: HP COMPRESSOR FRØY GAS K 602 A/B

TAG N° CM 606 A/B

Date effective : 02.04.92

Revision No. 020

Date revised 28.09.92

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- NOTES: 1. PURCHASER OR DRIVEN EQUIPMENT MANUFACTURER DATA TO BE COMPLETED BY PACKAGE MANUFACTURER
2. MOTOR MANUFACTURER DATA TO BE FILLED IN

GENERAL DATA

PURCHASER OR DRIVEN EQUIPMENT MANUFACTURER DATA

1. RATED VOLTAGE 5500 V 50 Hz
2. RATED SPEED 1482 RPM
3. DUTY TYPE CONTINUOUS
4. CONTINUOUS RATING 2850 kW
5. INTERMITTENT RATING N.A. kW

38. CROSS SECTION OF FIELD CABLE 2x2,5 mm²
39. OUTER SHEATH DIAMETER OF FIELD CABLE by VT mm²
40. CROSS SECTION OF HEATER CABLE 2x2,5 mm²
41. OUTER SHEATH DIAMETER OF HEATING CABLE by VT mm²
42. MAINPOWER CABLE GLAND ENTRY 80 mm ISO
43. SPACE HEATER CABLE GLAND ENTRY mm ISO
44. D.P. SWITCH CABLE GLAND ENTRY N.A. mm² ISO
45. TEMPERATURE SWITCH CABLE GLAND ENTRY N.A. mm² ISO
46. AIR FLOW SWITCH CABLE GLAND ENTRY N.A. mm² ISO
47. BLOWER FAN CABLE GLAND ENTRY N.A. mm² ISO
48. **BLANKED CABLE PLATES FOR THE AUXILIARIES.**

CONSTRUCTION

- STANDARDS AND CODES IEC 34 AND NFC51111
DEGREE OF PROTECTION IP55
8. INSULATION CLASS F ARMAT. FIELD
9. TEMPERATURE RISE 80 °C
10. COOLING METHOD WATER
11. Ex PROTECTION Exp D
12. TEMPERATURE CLASS T3
13. GAS GROUP IIA X
14. PAINT COLOUR GREY - RAL 7001

LOCATION

15. HAZARDOUS AREA CLASSIFICATION ZONE 2
16. AMBIENT TEMPERATURE MAX +22 MIN -10 °C

DRIVEN EQUIPMENT MECHANICAL DATA

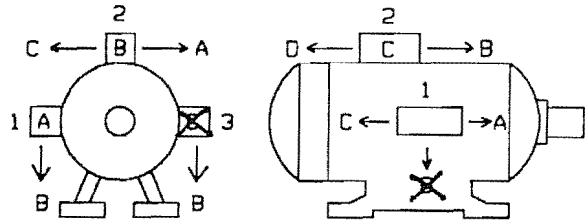
17. DRIVEN EQUIPMENT TYPE GEAR AND CENT. COMPRESSOR
18. MAX POWER ABS. BY DRIVEN EQUIPMENT 2500 kW
19. STARTING TORQUE REQUIRED ~ 0.2 N.T.
INERTIA OF DRIVEN EQUIPMENT AT RATED SPEED 1.8 x 10³ kgm²
MOUNTING ARRANGEMENT MOTOR/GEAR/COMP. ON SKID
22. DIRECTION OF ROTATION SEEN FROM DRIVING END
23. COUPLING FLEXIBOX CCW
24. THRUST DIRECTION OF DRIVEN EQUIPMENT ±
25. TRANSIT THRUST ±
26. PERMANENT THRUST ±
27. TYPE OF BEARING USED ON DRIVEN EQUIPMENT TP
28. DUTY CYCLE CONTINUOUS and starts
29. SPECIAL FEATURE N.A.

HEATING

30. SPACE HEATER REQUIRED YES YES/NO
31. SPACE HEATER VOLTAGE 220 V 50 Hz
32. SPACE HEATER ENCLOSURE EExd

CABLE AND TERMINAL BOXES

33. TERMINAL BOXES PROTECTION & Ex CERTIF IP56 /Exe
34. CABLE GLAND TYPE CAPRI ADE 4F - N°15
INCOMING CABLE TYPE REFU 2x3x120 + E mm²
CROSS SECTION OF POWER CABLE 120 mm²
37. OUTER SHEATH DIAMETER OF POWER CABLE ±3mm



JUNCTION BOXES POSITION AND CABLES ENTRIES

EARTHING

49. EARTHING TERMINAL INTERNAL EXTERNAL
50. EARTHING TERMINAL CROSS SECTION * mm²
51. MAIN TERMINAL BOX EARTHING 10 mm INSIDE
52. AUX TERMINAL BOX EARTHING 2,2 mm INSIDE
* MAIN TERMINAL BOX = 52 mm²
AUX. TERMINAL BOXES = 4 mm²

SPECIAL REQUIREMENTS

53. D.P. SWITCH VOLTAGE N.A.
54. D.P. SWITCH ENCLOSURE N.A.
55. TEMPERATURE SWITCH VOLTAGE N.A.
56. TEMPERATURE SWITCH ENCLDSURE N.A.
57. AIR FLOW SWITCH VOLTAGE N.A.
58. AIR FLOW SWITCH ENCLOSURE N.A.
59. TEMPERATURE SENSORS WINDINGS * YES (6)
60. TEMPERATURE SENSORS BEARINGS * YES (2 duplex)
61. BLOWER FAN VOLTAGE V Hz
62. NAMEPLATE S.S. INTERNAL/EXTERNAL
63. TEST YES ROUTING COMPLETE

FOR EACH MOTOR

- FULL LOAD TEST FOR 1 MOTOR OF EACH TYPE. (K 601 A/B and K 602 A/B)

* RTD/S PT 100Ω at 0°C



DATA SHEET

Ref No. DS-FF-22-23-0002

MANUFACTURER: ABB DRIVES - FRANCE
 TYPE/SIZE: RCPB 630 B-4
 SERVICE: LP COMPRESSOR FROY GAS K 602 A/B
 TAG N°: CM 606 A/B

Date effective 02.04.92
 Revision No 01C
 Date revised 15.05.92
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MOTOR MANUFACTURER DATA

GENERAL DATA

- 70. SERIAL NUMBER 348 595 / 348 596
- 71. RATED POWER CONTINUOUS 240 kW, INTERMITTENT — kW
- 72. RATED SPEED 1482 RPM
- 73. MAXIMUM SPEED N/A RPM
- 74. MINIMUM CONTINUOUS SPEED N/A RPM
- 75. TEMPERATURE RISE FOR P_N 80 °C
- 76. RATED CURRENT I_N 345 A
- 77. ARM CURRENT AT 50%, 75%, 100% LOAD N/A A
- 78. RATED EXCITATION CURRENT A N/A, VOLTAGE V AC
- 79. EFFICIENCY AT 50% 75% 100% LOAD 96.8-96.8-96.4 %
- 80. RATED VOLTAGE 5500 V AC
- 81. TYPE OF START BY REDUCE VOLTAGE
- 82. FULL VOLTAGE / RESISTANCE START
- 83. 1 STEP N/A ohm
- 84. 2 STEP N/A ohm
- 85. 3 STEP N/A ohm
- 86. 4 STEP N/A ohm
- 87. 5 STEP N/A ohm
- 88. NUMBER OF CONSECUTIVE STARTS, COLD 2
- 89. NUMBER OF CONSECUTIVE STARTS, HOT 1
- 90. NUMBER OF STARTS REPEATED PR. HOUR 3
- 91. ROTOR INERTIA W R² 88 kgm²
- 92. TORQUE AT 50% 75% 100% LOAD 1872 kgm
- 93. VIBRATION LEVEL 1,8 mm/s in test condition
- 94. NOISE LEVEL 83 ± 2 dBA db
- 95. WEIGHT 1140 kg
- 96. ROTOR WEIGHT 1835 kg

CERTIFICATION

- 117. TEST INSTITUTION LCIE
- 118. CERTIFICATE NUMBER 93C 6088X

REMARKS

- 119. DEVIATIONS FROM REQUIREMENT N/A
- 120. DIRECTION OF ROTATION: C.W
- 121. FRAME REF. NUMBER: RCPB 630 B4
- 122. DIMENSION DWG NR.: 24 J 9428
- 123. STARTING CURRENT RATIO = 4.3
- 124. POWER CURRENT RATIO ^{max} = 5.16
- 125. POWER FACTOR = 50% 0.88 -
75% 0.90 - 100% 0.90
- 126. STARTING P.F. 0.14
- 127. PULL UP TORQUE/FLT = 0.70
- 128. WINDING CONNECTION = STAR
- 129. PRESSURE LUBE OIL = 0.5 bar
- 130. COOLING SYSTEM FLOW = 19 m³/h
PRESSURE = 7 bar
- 131. COOLING WATER TEMP. 25°C MAX.
- 132. ROTOR END PLAY: ± 6,5 mm
END FLOAT = 3 mm
AIR GAP = 2,5 mm

CONSTRUCTION

- 97. INSULATION CLASS ARMATURE F FIELD N/A
- 98. IMPREGNATION TYPE VPI - EPOXY
- 99. COOLING METHOD CACW ICW 37 AB1
- 100. FRAME SIZE 630
- 101. FRAME ENCLOSURE MATERIAL Welded steel E24.2
- 102. COOLING FAN MATERIAL N/A
- 103. EXTERNAL FAN COVER MATERIAL N/A
- 104. EXTERNAL NAMEPLATE MATERIAL S. STEEL
- 105. INTERNAL NAMEPLATE MATERIAL S. STEEL
- 106. SCREWS, BOLTS MATERIAL S. STEEL Z6CN18.10
- 107. BEARING DRIVING END SLEEVE
- 108. BEARING NON - DRIVING END SLEEVE
- 109. LUBRICATION SYSTEM AND DEVICES FORCED OIL
- 110. TYPE OF OIL AND GREASE ISO VG 32
- 111. OILING AND GREASING FREQUENCY N/A
- 112. PAINTING JS CHIM ABB SPEC. 24 J 8117/A
- 113. LIFTING LUG YES

- 133. VIBRATION LEVEL PEAK TO PEAK
- NORMAL OPER. = 80 microns
- TRIP LEVEL = 120 microns
Velocity = 4.5 mm/s

- 134. COOLANT LEAK DETECTOR:
Magnetrol - MG 1003.XC 75
1B20 - W N U

- 135. PRESSURIZATION:
EXPO SYSTEM - LCA 102
Scavenging = 100 Nm³/h - 10 minutes
Normal air flow = 9 Nm³/h.

HEATING AND ACCESSORIES

- 114. SPACE HEATER POWER 500 W
- 115. BLOWER FAN POWER N/A W
- 116. SPACE HEATER 'BLOWER FAN' POWER N/A W

TOLERANCES IN ACCORD. IEC 34