GENERAL TOLERANCES GENERALES	DIMENSION	<=6	> 6	> 30	> 120	> 315	>1000	>2000
	USINAGE MOYEN/MEDIUM MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
	MECANO. SOUDURE/WELDED STRUCTURE	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10

DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

Scem: 04.21.22.750.9 CAB.ROUND/FLAT HARDENED 2X25 AWG 28

Scem: 04.21.01.612.2 CABLE SIG.FL.12x0,50mm2

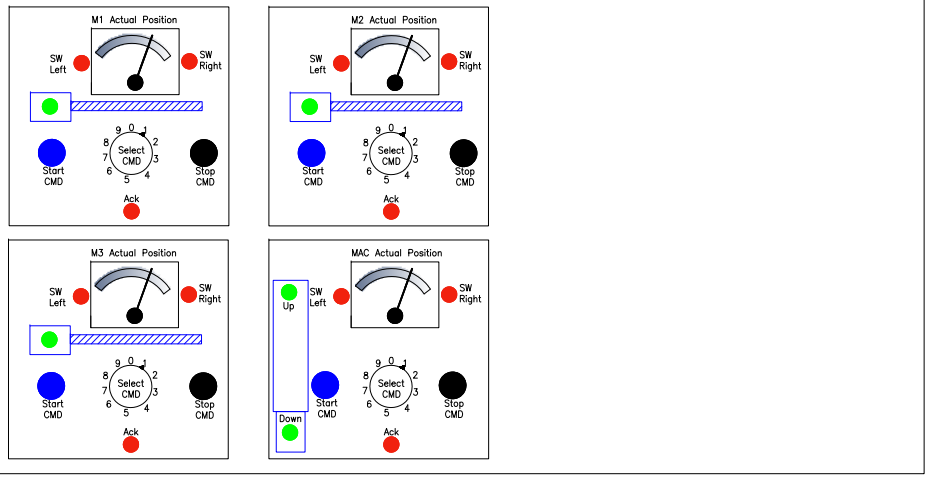
Scem: 04.08.61.735.4 MULTIPOLAIRE FLEXIBLE COPPER CABLE 5X1,5MM2

AC 220V Con-2 | DC 24V Con-1 | Con-3 | RS232 Con-4 | Con-5 | Con-6

M1 | M2 | M3 | MAC

T-1 | T-2 | T-3 | T-4

Alu box inside T7 Area, fixed on the table



Box BIMCONSOLES2802 RadioSpares 207-1537

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS		S.ENS/S.ASS		

Motors CMD Irradiation facilities

ECHELLE SCALE

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

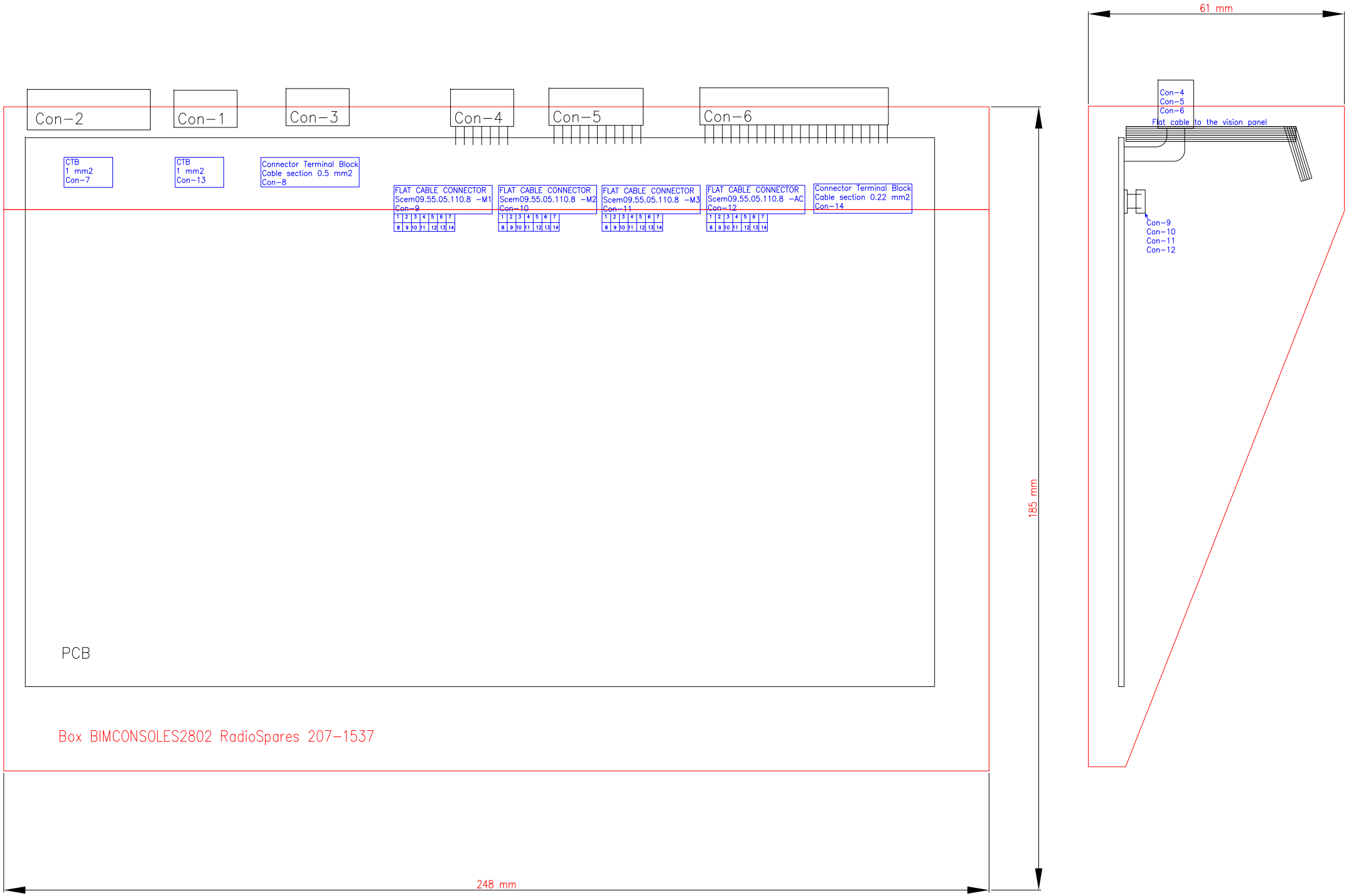
REMPLACE/REPLACES

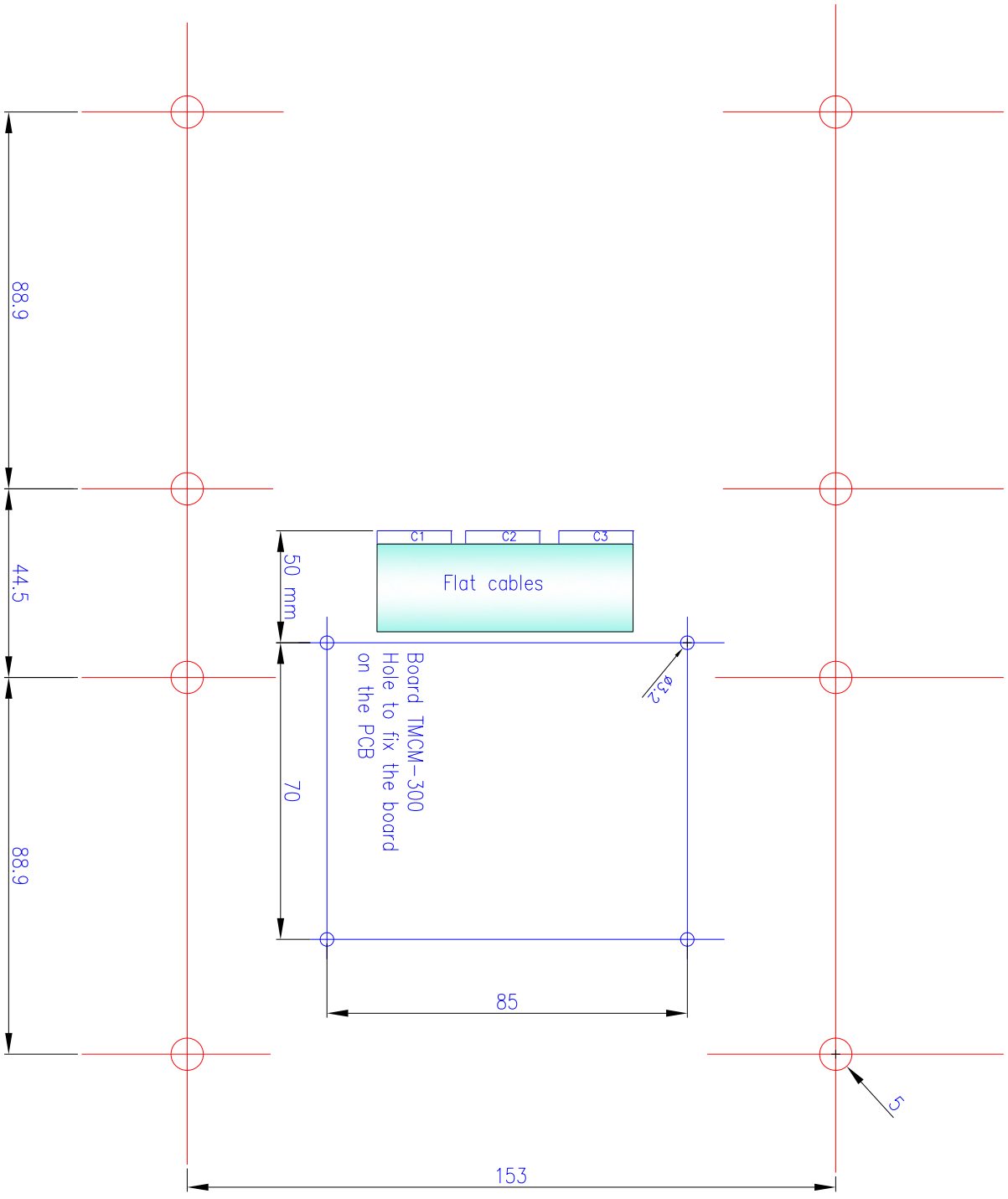
NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND. 3

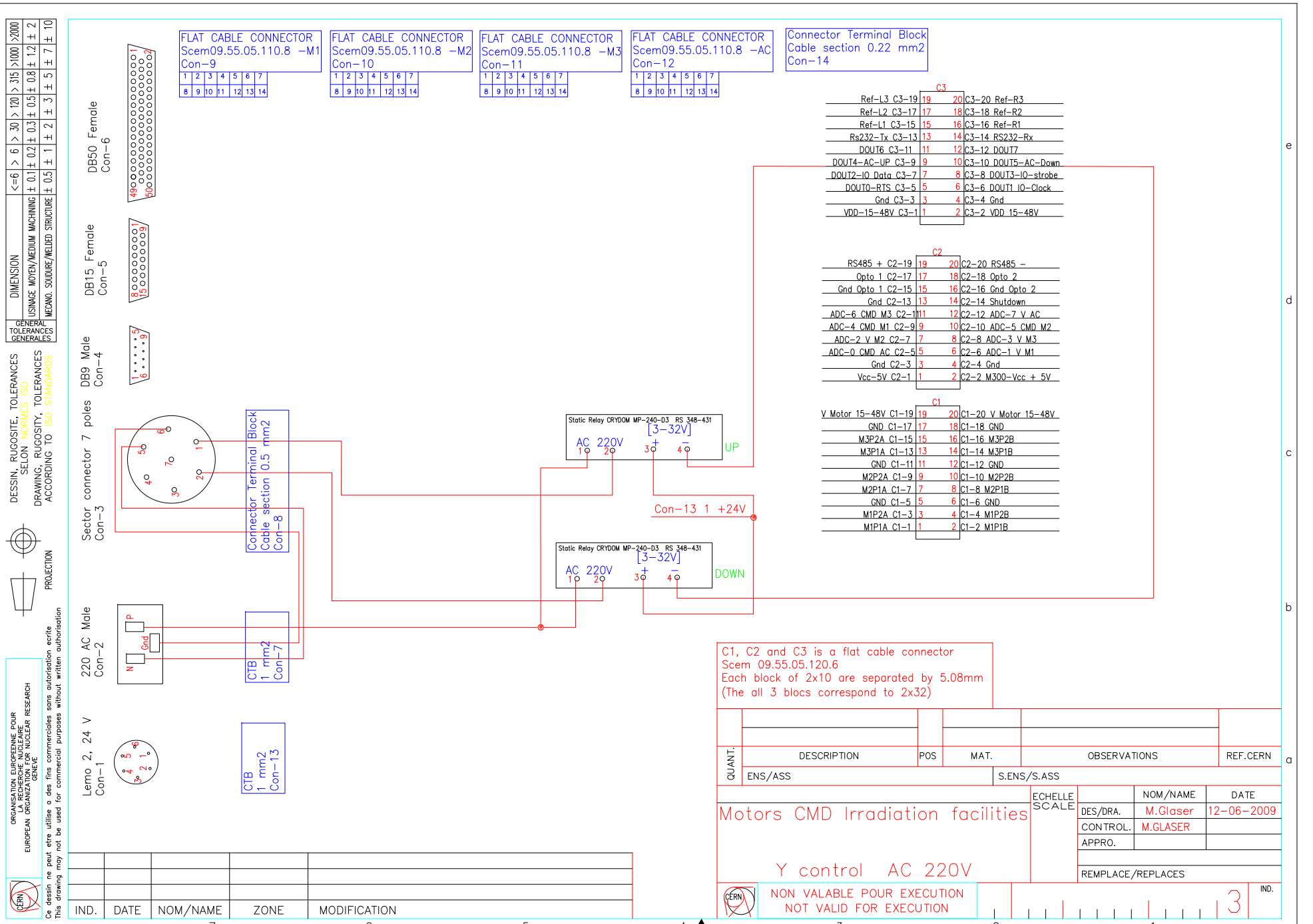
7 6 5 4 3 2 1

e d c b a


Con−2
Con−1
Con−3
Con−4
Con−5
Con−6
CTB
1 mm2
Con−7
CTB
1 mm2
Con−13
Connector Terminal Block
Cable section 0.5 mm2
Con−8
FLAT CABLE CONNECTOR
Scem09.55.05.110.8 −M1
Con−9
FLAT CABLE CONNECTOR
Scem09.55.05.110.8 −M2
Con−10
FLAT CABLE CONNECTOR
Scem09.55.05.110.8 −M3
Con−11
FLAT CABLE CONNECTOR
Scem09.55.05.110.8 −AC
Con−12
Connector Terminal Block
Cable section 0.22 mm2
Con−14
PCB
Box BIMCONSOLES2802 RadioSpares 207−1537
248 mm
185 mm
61 mm
Con−4
Con−5
Con−6
Flat cable to the vision panel
Con−9
Con−10
Con−11
Con−12



Hole to fix the PCB inside the box


FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M1 Con-9
FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M2 Con-10
FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M3 Con-11
FLAT CABLE CONNECTOR Scem09.55.05.110.8 -AC Con-12
Connector Terminal Block Cable section 0.22 mm2 Con-14
DB50 Female Con-6
DB15 Female Con-5
DB9 Male Con-4
Sector connector 7 poles Con-3
220 AC Male Con-2
Lemo 2, 24 V Con-1
C3
Ref-L3 C3-19 19 20 C3-20 Ref-R3
Ref-L2 C3-17 17 18 C3-18 Ref-R2
Ref-L1 C3-15 15 16 C3-16 Ref-R1
Rs232-Tx C3-13 13 14 C3-14 RS232-Rx
DOUT6 C3-11 11 12 C3-12 DOUT7
DOUT4-AC-UP C3-9 9 10 C3-10 DOUT5-AC-Down
DOUT2-IO Data C3-7 7 8 C3-8 DOUT3-IO-strobe
DOUT0-RTS C3-5 5 6 C3-6 DOUT1 IO-Clock
Gnd C3-3 3 4 C3-4 Gnd
VDD-15-48V C3-1 1 2 C3-2 VDD 15-48V
C2
RS485 + C2-19 19 20 C2-20 RS485 -
Opto 1 C2-17 17 18 C2-18 Opto 2
Gnd Opto 1 C2-15 15 16 C2-16 Gnd Opto 2
Gnd C2-13 13 14 C2-14 Shutdown
ADC-6 CMD M3 C2-11 11 12 C2-12 ADC-7 V AC
ADC-4 CMD M1 C2-9 9 10 C2-10 ADC-5 CMD M2
ADC-2 V M2 C2-7 7 8 C2-8 ADC-3 V M3
ADC-0 CMD AC C2-5 5 6 C2-6 ADC-1 V M1
Gnd C2-3 3 4 C2-4 Gnd
Vcc-5V C2-1 1 2 C2-2 M300-Vcc + 5V
C1
V Motor 15-48V C1-19 19 20 C1-20 V Motor 15-48V
GND C1-17 17 18 C1-18 GND
M3P2A C1-15 15 16 C1-16 M3P2B
M3P1A C1-13 13 14 C1-14 M3P1B
GND C1-11 11 12 C1-12 GND
M2P2A C1-9 9 10 C1-10 M2P2B
M2P1A C1-7 7 8 C1-8 M2P1B
GND C1-5 5 6 C1-6 GND
M1P2A C1-3 3 4 C1-4 M1P2B
M1P1A C1-1 1 2 C1-2 M1P1B
Static Relay CRYDOM MP-240-D3 RS 348-431
[3-32V]
AC 220V
UP
DOWN
Con-13 1 +24V
Connector Terminal Block Cable section 0.5 mm2 Con-8
CTB 1 mm2 Con-7
CTB 1 mm2 Con-13
C1, C2 and C3 is a flat cable connector
Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)
Motors CMD Irradiation facilities
Y control AC 220V
NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION
DESCRIPTION
POS
MAT.
OBSERVATIONS
REF.CERN
QUANT.
ENS/ASS
S.ENS/S.ASS
ECHELLE SCALE
NOM/NAME
DATE
DES/DRA. M.Glaser 12-06-2009
CONTROL. M.GLASER
APPRO.
REMPLACE/REPLACES
IND.
DATE
ZONE
MODIFICATION
DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS
PROJECTION
ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH
GENEVE
Ce dessin ne peut etre utilise a des fins commerciales sans autorisation ecrite
This drawing may not be used for commercial purposes without written authorisation

GENERAL TOLERANCES GENERALES	DIMENSION	<=6	> 6	> 30	> 120	> 315	>1000	>2000
	USINAGE MOYEN/MEDIUM MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
	MECANO. SOUDURE/WELDED STRUCTURE	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10

DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

Lemo 2, 24 V
Con-1

220 AC Male
Con-2

Sector connector 7 poles
Con-3

DB9 Male
Con-4

DB15 Female
Con-5

DB50 Female
Con-6

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M1
Con-9

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M2
Con-10

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M3
Con-11

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -AC
Con-12

1	2	3	4	5	6	7
8	9	10	11	12	13	14

Connector Terminal Block
Cable section 0.22 mm2
Con-14

Connector Terminal Block
Cable section 0.5 mm2
Con-8

CTB
1 mm2
Con-7

CTB
1 mm2
Con-13

C3

Ref-L3 C3-19	19	20	C3-20 Ref-R3
Ref-L2 C3-17	17	18	C3-18 Ref-R2
Ref-L1 C3-15	15	16	C3-16 Ref-R1
Rs232-Tx C3-13	13	14	C3-14 RS232-Rx
DOUT6 C3-11	11	12	C3-12 DOUT7
DOUT4-AC-UP C3-9	9	10	C3-10 DOUT5-AC-Down
DOUT2-IO Data C3-7	7	8	C3-8 DOUT3-IO-strobe
DOUT0-RTS C3-5	5	6	C3-6 DOUT1 IO-Clock
Con-13 2 Gnd / Gnd C3-3	3	4	C3-4 Gnd / Con-13 2 Gnd
Con-13 1 +24V / VDD-15-48V C3-1	1	2	C3-2 VDD 15-48V / Con-13 1 +24V

C2

RS485 + C2-19	19	20	C2-20 RS485 -
Opto 1 C2-17	17	18	C2-18 Opto 2
Gnd Opto 1 C2-15	15	16	C2-16 Gnd Opto 2
Gnd C2-13	13	14	C2-14 Shutdown
ADC-6 CMD M3 C2-11	11	12	C2-12 ADC-7 V AC
ADC-4 CMD M1 C2-9	9	10	C2-10 ADC-5 CMD M2
ADC-2 V M2 C2-7	7	8	C2-8 ADC-3 V M3
ADC-0 CMD AC C2-5	5	6	C2-6 ADC-1 V M1
Gnd C2-3	3	4	C2-4 Gnd
Vcc-5V C2-1	1	2	C2-2 M300-Vcc + 5V

C1

Con-13 1 +24V	V Motor 15-48V C1-19	19	20	C1-20 V Motor 15-48V	Con-13 1 +24V
Con-13 2 Gnd	GND C1-17	17	18	C1-18 GND	Con-13 2 Gnd
Con-5 ? M3P2A	M3P2A C1-15	15	16	C1-16 M3P2B	Con-5 ? M3P2B
Con-5 ? M3P1A	M3P1A C1-13	13	14	C1-14 M3P1B	Con-5 ? M3P1B
Con-5 ? Gnd	GND C1-11	11	12	C1-12 GND	Con-5 ? Gnd
Con-5 ? M2P2A	M2P2A C1-9	9	10	C1-10 M2P2B	Con-5 ? M2P2B
Con-5 ? M2P1A	M2P1A C1-7	7	8	C1-8 M2P1B	Con-5 ? M2P1B
Con-5 ? Gnd	GND C1-5	5	6	C1-6 GND	Con-5 ? Gnd
Con-5 ? M1P2A	M1P2A C1-3	3	4	C1-4 M1P2B	Con-5 ? M1P2B
Con-5 ? M1P1A	M1P1A C1-1	1	2	C1-2 M1P1B	Con-5 ? M1P1B

? Can be connected as you like on the Con5, I will do the correct connection on the table after you have made the board and fix the pin number.

C1, C2 and C3 is a flat cable connector
Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS			S.ENS/S.ASS	

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

Motors CMD Irradiation facilities

Power of 3 Stepper motors

ECHELLE SCALE

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

REMPLACE/REPLACES

NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND. 3

7 6 5 4 3 2 1

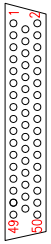
e d c b a

GENERAL TOLERANCES GENERALES	DIMENSION	<=6	> 6	> 30	> 120	> 315	>1000	>2000
	USINAGE MOYEN/MEDIUM MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
	MECANO. SOUDURE/WELDED STRUCTURE	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10

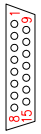
DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

DB50 Female
Con-6

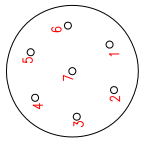


DB15 Female
Con-5



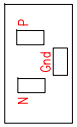
DB9 Male
Con-4

Sector connector 7 poles
Con-3



Connector Terminal Block
Cable section 0.5 mm2
Con-8

220 AC Male
Con-2



CTB
1 mm2
Con-7

Lemo 2, 24
Con-1

CTB
1 mm2
Con-13

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M1
Con-9

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M2
Con-10

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M3
Con-11

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -AC
Con-12

1	2	3	4	5	6	7
8	9	10	11	12	13	14

Connector Terminal Block
Cable section 0.22 mm2
Con-14

C1, C2 and C3 is a flat cable connector
Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)

C3

	Ref-L3 C3-19	19	20	C3-20 Ref-R3
	Ref-L2 C3-17	17	18	C3-18 Ref-R2
	Ref-L1 C3-15	15	16	C3-16 Ref-R1
Con-4 Pin 2	Rs232-Tx C3-13	13	14	C3-14 RS232-Rx Con-4 Pin 3
	DOUT6 C3-11	11	12	C3-12 DOUT7
	DOUT4-AC-UP C3-9	9	10	C3-10 DOUT5-AC-Down
	DOUT2-IO Data C3-7	7	8	C3-8 DOUT3-IO-strobe
	DOUT0-RTS C3-5	5	6	C3-6 DOUT1 IO-Clock
Con-4 Pin 5	Gnd C3-3	3	4	C3-4 Gnd
	VDD-15-48V C3-1	1	2	C3-2 VDD 15-48V

C2

Con-14 Pin ?	RS485 + C2-19	19	20	C2-20 RS485 - Con-14 Pin ?
	Opto 1 C2-17	17	18	C2-18 Opto 2
	Gnd Opto 1 C2-15	15	16	C2-16 Gnd Opto 2
	Gnd C2-13	13	14	C2-14 Shutdown Con-14 Pin ?
	ADC-6 CMD M3 C2-11	11	12	C2-12 ADC-7 V AC
	ADC-4 CMD M1 C2-9	9	10	C2-10 ADC-5 CMD M2
	ADC-2 V M2 C2-7	7	8	C2-8 ADC-3 V M3
	ADC-0 CMD AC C2-5	5	6	C2-6 ADC-1 V M1
	Gnd C2-3	3	4	C2-4 Gnd
	Vcc-5V C2-1	1	2	C2-2 M300-Vcc + 5V

C1

	V Motor 15-48V C1-19	19	20	C1-20 V Motor 15-48V
	GND C1-17	17	18	C1-18 GND
	M3P2A C1-15	15	16	C1-16 M3P2B
	M3P1A C1-13	13	14	C1-14 M3P1B
	GND C1-11	11	12	C1-12 GND
	M2P2A C1-9	9	10	C1-10 M2P2B
	M2P1A C1-7	7	8	C1-8 M2P1B
	GND C1-5	5	6	C1-6 GND
	M1P2A C1-3	3	4	C1-4 M1P2B
	M1P1A C1-1	1	2	C1-2 M1P1B

? Can be connected as you like on the Con5, I will do the correct connection on the table after you have made the board and fix the pin number.

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS		S.ENS/S.ASS		

Motors CMD Irradiation facilities

Shutdown
RS-232 & RS-485

ECHELLE SCALE

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

REMPLACE/REPLACES

NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND. 3

7 6 5 4 3 2 1

e d c b a

GENERAL TOLERANCES GENERALES	DIMENSION	<=6	> 6	> 30	> 120	> 315	>1000	>2000
	USINAGE MOYEN/MEDIUM MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
	MECANO. SOUDURE/WELDED STRUCTURE	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10

DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

Lemo 2, 24 V
Con-1

220 AC Male
Con-2

Sector connector 7 poles
Con-3

DB9 Male
Con-4

DB15 Female
Con-5

DB50 Female
Con-6

CTB
1 mm2
Con-13

CTB
1 mm2
Con-7

Connector Terminal Block
Cable section 0.5 mm2
Con-8

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M1
Con-9

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M2
Con-10

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M3
Con-11

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -AC
Con-12

Connector Terminal Block
Cable section 0.22 mm2
Con-14

Con-6 ? Should use a pair! — Current driver 1 mA Pot. M1

Con-6 ? Should use a pair! — Current driver 1 mA Pot. M2

Con-6 ? Should use a pair! — Current driver 1 mA Pot. M3

Con-6 ? Should use a pair! — Current driver 1 mA Pot. AC

Con-6 ? Should use a pair! — Current driver 1 mA PT100. Temp1

Con-6 ? Should use a pair! — Current driver 1 mA PT100 Temp2

Con-6 ? Should use a pair! — Current driver 1 mA PT100 Temp3

Con-6 ? Should use a pair! — Current driver 1 mA PT100 Temp4

C3

Ref-L3 C3-19	19	20	C3-20 Ref-R3
Ref-L2 C3-17	17	18	C3-18 Ref-R2
Ref-L1 C3-15	15	16	C3-16 Ref-R1
Rs232-Tx C3-13	13	14	C3-14 RS232-Rx
DOUT6 C3-11	11	12	C3-12 DOUT7
DOUT4-AC-UP C3-9	9	10	C3-10 DOUT5-AC-Down
DOUT2-IO Data C3-7	7	8	C3-8 DOUT3-IO-strobe
DOUT0-RTS C3-5	5	6	C3-6 DOUT1 IO-Clock
Gnd C3-3	3	4	C3-4 Gnd
VDD-15-48V C3-1	1	2	C3-2 VDD 15-48V

C2

RS485 + C2-19	19	20	C2-20 RS485 -
Opto 1 C2-17	17	18	C2-18 Opto 2
Gnd Opto 1 C2-15	15	16	C2-16 Gnd Opto 2
Gnd C2-13	13	14	C2-14 Shutdown
ADC-6 CMD M3 C2-11	11	12	C2-12 ADC-7 V AC
ADC-4 CMD M1 C2-9	9	10	C2-10 ADC-5 CMD M2
ADC-2 V M2 C2-7	7	8	C2-8 ADC-3 V M3
ADC-0 CMD AC C2-5	5	6	C2-6 ADC-1 V M1
Gnd C2-3	3	4	C2-4 Gnd
Vcc-5V C2-1	1	2	C2-2 M300-Vcc + 5V

C1

V Motor 15-48V C1-19	19	20	C1-20 V Motor 15-48V
GND C1-17	17	18	C1-18 GND
M3P2A C1-15	15	16	C1-16 M3P2B
M3P1A C1-13	13	14	C1-14 M3P1B
GND C1-11	11	12	C1-12 GND
M2P2A C1-9	9	10	C1-10 M2P2B
M2P1A C1-7	7	8	C1-8 M2P1B
GND C1-5	5	6	C1-6 GND
M1P2A C1-3	3	4	C1-4 M1P2B
M1P1A C1-1	1	2	C1-2 M1P1B

C1, C2 and C3 is a flat cable connector
Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)

? Can be connected as you like on the Conx, I will do the correct connection on the table after you have made the board and fix the pin number.

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS		S.ENS/S.ASS		

Motors CMD Irradiation facilities
Current driver for M1, M2, M3, AC position + Thermal sensor

ECHELLE SCALE

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

REMPLACE/REPLACES

NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND. 3

7 6 5 4 3 2 1

e d c b a

GENERAL TOLERANCES GENERALES	DIMENSION	<=6	> 6	> 30	> 120	> 315	>1000	>2000
	USINAGE MOYEN/MEDIUM MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
	MECANO. SOUDURE/WELDED STRUCTURE	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10

DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

Lemo 2, 24 V Con-1

220 AC Male Con-2 (P, Gnd, N)

Sector connector 7 poles Con-3

DB9 Male Con-4

DB15 Female Con-5

DB50 Female Con-6

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M1 Con-9

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M2 Con-10

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M3 Con-11

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -AC Con-12

1	2	3	4	5	6	7
8	9	10	11	12	13	14

Connector Terminal Block Cable section 0.22 mm2 Con-14

Connector Terminal Block Cable section 0.5 mm2 Con-8

CTB 1 mm2 Con-7

CTB 1 mm2 Con-13

Con-6 ? Should use a pair!

Position M1
- WDac: Gain@5-15 — Con-14 ?
- M300: G@1-5 — C2-6
- User: G@1-5 — Con-14 ?
- Panel:G@0.5-2 — Con-9 ?

Position M2 = M1
- Con-14 ?
- C2-7
- Con-14 ?
- Con-10 ?

Position M3 = M1
- Con-14 ?
- C2-8
- Con-14 ?
- Con-11 ?

Position AC = M1
- Con-14 ?
- C2-12
- Con-14 ?
- Con-12 ?

Temp1 3 channels with gain 40
- Con-14 ? WDac
- Con-14 ? User
- Con-14 ? Ctrl

Temp2 3 channels with gain 40
- Con-14 ? WDac
- Con-14 ? User
- Con-14 ? Ctrl

Temp3 3 channels with gain 40
- Con-14 ? WDac
- Con-14 ? User
- Con-14 ? Ctrl

Temp4 3 channels with gain 40
- Con-14 ? WDac
- Con-14 ? User
- Con-14 ? Ctrl

C3

Ref-L3 C3-19	19	20	C3-20 Ref-R3
Ref-L2 C3-17	17	18	C3-18 Ref-R2
Ref-L1 C3-15	15	16	C3-16 Ref-R1
Rs232-Tx C3-13	13	14	C3-14 RS232-Rx
DOUT6 C3-11	11	12	C3-12 DOUT7
DOUT4-AC-UP C3-9	9	10	C3-10 DOUT5-AC-Down
DOUT2-IO Data C3-7	7	8	C3-8 DOUT3-IO-strobe
DOUT0-RTS C3-5	5	6	C3-6 DOUT1 IO-Clock
Gnd C3-3	3	4	C3-4 Gnd
VDD-15-48V C3-1	1	2	C3-2 VDD 15-48V

C2

RS485 + C2-19	19	20	C2-20 RS485 -
Opto 1 C2-17	17	18	C2-18 Opto 2
Gnd Opto 1 C2-15	15	16	C2-16 Gnd Opto 2
Gnd C2-13	13	14	C2-14 Shutdown
ADC-6 CMD M3 C2-11	11	12	C2-12 ADC-7 V AC
ADC-4 CMD M1 C2-9	9	10	C2-10 ADC-5 CMD M2
ADC-2 V M2 C2-7	7	8	C2-8 ADC-3 V M3
ADC-0 CMD AC C2-5	5	6	C2-6 ADC-1 V M1
Gnd C2-3	3	4	C2-4 Gnd
Vcc-5V C2-1	1	2	C2-2 M300-Vcc + 5V

C1

V Motor 15-48V C1-19	19	20	C1-20 V Motor 15-48V
GND C1-17	17	18	C1-18 GND
M3P2A C1-15	15	16	C1-16 M3P2B
M3P1A C1-13	13	14	C1-14 M3P1B
GND C1-11	11	12	C1-12 GND
M2P2A C1-9	9	10	C1-10 M2P2B
M2P1A C1-7	7	8	C1-8 M2P1B
GND C1-5	5	6	C1-6 GND
M1P2A C1-3	3	4	C1-4 M1P2B
M1P1A C1-1	1	2	C1-2 M1P1B

? Can be connected as you like on Conx , I will do the correct connection on the table after you have made the board and fix the pin number.

C1, C2 and C3 is a flat cable connector
Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS		S.ENS/S.ASS		

Motors CMD Irradiation facilities
Gain amplifier for M1, M2, M3, AC position + Thermal sensor

ECHELLE SCALE

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

REMPLACE/REPLACES

NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND.

3

7 6 5 4 3 2 1

a b c d e

GENERAL TOLERANCES GENERALES	<=6	> 6	> 30	> 120	> 315	>1000	>2000
DIMENSION	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
USINAGE MOYEN/MEDIUM MACHINING	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10
MECANO. SOUDURE/WELDED STRUCTURE							

DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

Sector connector 7 poles
Con-3

DB9 Male
Con-4

DB15 Female
Con-5

DB50 Female
Con-6

220 AC Male
Con-2

Lemo 2, 24
Con-1

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M1
Con-9

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M2
Con-10

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -M3
Con-11

FLAT CABLE CONNECTOR
Scem09.55.05.110.8 -AC
Con-12

Connector Terminal Block
Cable section 0.22 mm2
Con-14

C1, C2 and C3 is a flat cable connector
Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)

Con-6 ? L3-NO — R 8k — Con-11 ? L3-NO
Con-6 ? R3-NO — R 8k — Con-11 ? R3-NO
Con-6 ? L2-NO — R 8k — Con-10 ? L2-NO
Con-6 ? R2-NO — R 8k — Con-10 ? R2-NO
Con-6 ? L1-NO — R 8k — Con-9 ? L1-NO
Con-6 ? R1-NO — R 8k — Con-9 ? R1-NO

Security InBeam Relay 24 V
Gnd
+24
NO
NC
Con-14 In Security InBeam
Con-14 Out Security InBeam
Con-13 +24 V

Connector Terminal Block
Cable section 0.5 mm2
Con-8

Con-6 ? LAC-NO — R 8k — Con-12 ? LAC-NO
Con-6 ? RAC-NO — R 8k — Con-12 ? RAC-NO

CTB
1 mm2
Con-7

CTB
1 mm2
Con-13
Con-6, 9, 10, 11, 12, 14 ? 24V
Con-6, 9, 10, 11, 12, 14 ? GND

C3

Con-6 ? L3-NC	Ref-L3 C3-19	19 20	C3-20 Ref-R3 — Con-6 ? R3-NC
Con-6 ? L2-NC	Ref-L2 C3-17	17 18	C3-18 Ref-R2 — Con-6 ? R2-NC
Con-6 ? L1-NC	Ref-L1 C3-15	15 16	C3-16 Ref-R1 — Con-6 ? R1-NC
	Rs232-Tx C3-13	13 14	C3-14 RS232-Rx
	DOUT6 C3-11	11 12	C3-12 DOUT7
	DOUT4-AC-UP C3-9	9 10	C3-10 DOUT5-AC-Down
	DOUT2-IO Data C3-7	7 8	C3-8 DOUT3-IO-strobe
	DOUT0-RTS C3-5	5 6	C3-6 DOUT1 IO-Clock
	Gnd C3-3	3 4	C3-4 Gnd
	VDD-15-48V C3-1	1 2	C3-2 VDD 15-48V

C2

Con-13 +24 V — 8K	RS485 + C2-19	19 20	C2-20 RS485 -
Con-6 ? LAC-NC	Opto 1 C2-17	17 18	C2-18 Opto 2 — 8K — Con-13 +24 V
GND	Gnd Opto 1 C2-15	15 16	C2-16 Gnd Opto 2 — Con-14 ? Beam Syncr. GND
	Gnd C2-13	13 14	C2-14 Shutdown
	ADC-6 CMD M3 C2-11	11 12	C2-12 ADC-7 V AC
	ADC-4 CMD M1 C2-9	9 10	C2-10 ADC-5 CMD M2
	ADC-2 V M2 C2-7	7 8	C2-8 ADC-3 V M3
	ADC-0 CMD AC C2-5	5 6	C2-6 ADC-1 V M1
	Gnd C2-3	3 4	C2-4 Gnd
	Vcc-5V C2-1	1 2	C2-2 M300-Vcc + 5V

C1

	V Motor 15-48V C1-19	19 20	C1-20 V Motor 15-48V
	GND C1-17	17 18	C1-18 GND
	M3P2A C1-15	15 16	C1-16 M3P2B
	M3P1A C1-13	13 14	C1-14 M3P1B
	GND C1-11	11 12	C1-12 GND
	M2P2A C1-9	9 10	C1-10 M2P2B
	M2P1A C1-7	7 8	C1-8 M2P1B
	GND C1-5	5 6	C1-6 GND
	M1P2A C1-3	3 4	C1-4 M1P2B
	M1P1A C1-1	1 2	C1-2 M1P1B

? Can be connected as you like on the Con5, I will do the correct connection on the table after you have made the board and fix the pin number.

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS		S.ENS/S.ASS		

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

ECHELLE SCALE

Motors CMD Irradiation facilities

Security InBeam & End Switch for the motors

REMPLACE/REPLACES

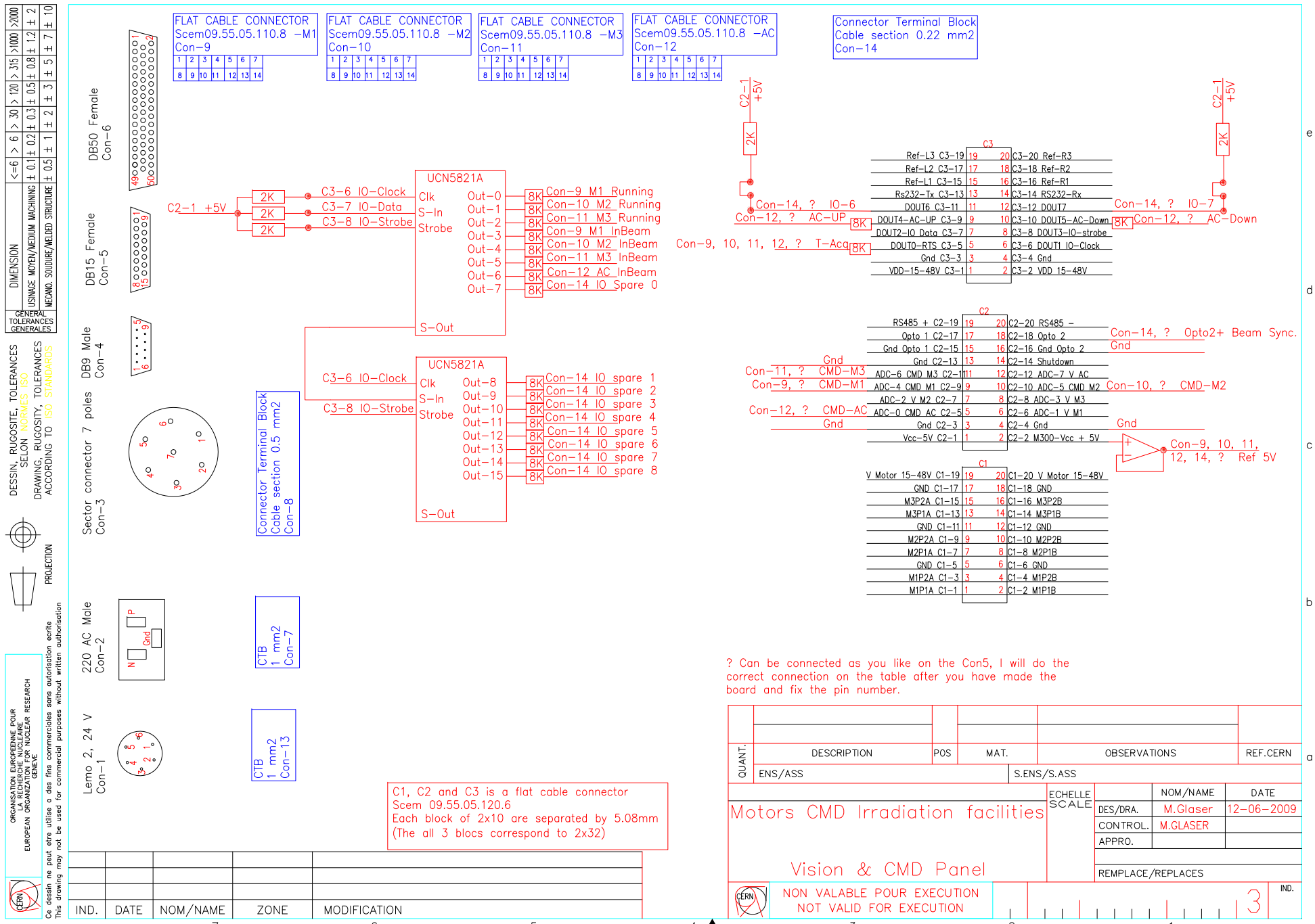
NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND. 3

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

7 6 5 4 3 2 1

e d c b a


FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M1 Con-9
FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M2 Con-10
FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M3 Con-11
FLAT CABLE CONNECTOR Scem09.55.05.110.8 -AC Con-12
Connector Terminal Block Cable section 0.22 mm2 Con-14
DB50 Female Con-6
DB15 Female Con-5
DB9 Male Con-4
Sector connector 7 poles Con-3
220 AC Male Con-2
Lemo 2, 24 V Con-1
C2-1 +5V
2K
C3-6 IO-Clock
C3-7 IO-Data
C3-8 IO-Strobe
UCN5821A
Clk
S-In
Strobe
S-Out
Out-0
Out-1
Out-2
Out-3
Out-4
Out-5
Out-6
Out-7
8K
Con-9 M1 Running
Con-10 M2 Running
Con-11 M3 Running
Con-9 M1 InBeam
Con-10 M2 InBeam
Con-11 M3 InBeam
Con-12 AC InBeam
Con-14 IO Spare 0
Con-14, ? IO-6
Con-12, ? AC-UP
Con-9, 10, 11, 12, ? T-Acq
Con-14, ? IO-7
Con-12, ? AC-Down
C3
Ref-L3 C3-19
Ref-L2 C3-17
Ref-L1 C3-15
Rs232-Tx C3-13
DOUT6 C3-11
DOUT4-AC-UP C3-9
DOUT2-IO Data C3-7
DOUT0-RTS C3-5
Gnd C3-3
VDD-15-48V C3-1
C3-20 Ref-R3
C3-18 Ref-R2
C3-16 Ref-R1
C3-14 RS232-Rx
C3-12 DOUT7
C3-10 DOUT5-AC-Down
C3-8 DOUT3-IO-strobe
C3-6 DOUT1 IO-Clock
C3-4 Gnd
C3-2 VDD 15-48V
C2
RS485 + C2-19
Opto 1 C2-17
Gnd Opto 1 C2-15
Gnd C2-13
ADC-6 CMD M3 C2-11
ADC-4 CMD M1 C2-9
ADC-2 V M2 C2-7
ADC-0 CMD AC C2-5
Gnd C2-3
Vcc-5V C2-1
C2-20 RS485 -
C2-18 Opto 2
C2-16 Gnd Opto 2
C2-14 Shutdown
C2-12 ADC-7 V AC
C2-10 ADC-5 CMD M2
C2-8 ADC-3 V M3
C2-6 ADC-1 V M1
C2-4 Gnd
C2-2 M300-Vcc + 5V
Con-14, ? Opto2+ Beam Sync.
Gnd
Con-11, ? CMD-M3
Con-9, ? CMD-M1
Con-12, ? CMD-AC
Con-10, ? CMD-M2
Con-9, 10, 11, 12, 14, ? Ref 5V
C1
V Motor 15-48V C1-19
GND C1-17
M3P2A C1-15
M3P1A C1-13
GND C1-11
M2P2A C1-9
M2P1A C1-7
GND C1-5
M1P2A C1-3
M1P1A C1-1
C1-20 V Motor 15-48V
C1-18 GND
C1-16 M3P2B
C1-14 M3P1B
C1-12 GND
C1-10 M2P2B
C1-8 M2P1B
C1-6 GND
C1-4 M1P2B
C1-2 M1P1B
Connector Terminal Block Cable section 0.5 mm2 Con-8
CTB 1 mm2 Con-7
CTB 1 mm2 Con-13
? Can be connected as you like on the Con5, I will do the correct connection on the table after you have made the board and fix the pin number.
C1, C2 and C3 is a flat cable connector Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)
GENERAL TOLERANCES GENERALES
DIMENSION
<=6 | > 6 | > 30 | > 120 | > 315 | >1000 | >2000
USINAGE MOYEN/MEDIUM MACHINING ± 0.1 | ± 0.2 | ± 0.3 | ± 0.5 | ± 0.8 | ± 1.2 | ± 2
MECANO. SOUDURE/WELDED STRUCTURE ± 0.5 | ± 1 | ± 2 | ± 3 | ± 5 | ± 7 | ± 10
DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS
PROJECTION
ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH
GENEVE
Ce dessin ne peut etre utilise a des fins commerciales sans autorisation ecrite
This drawing may not be used for commercial purposes without written authorisation
QUANT. | DESCRIPTION | POS | MAT. | OBSERVATIONS | REF.CERN
ENS/ASS | S.ENS/S.ASS
Motors CMD Irradiation facilities
Vision & CMD Panel
ECHELLE SCALE
DES/DRA. M.Glaser 12-06-2009
CONTROL. M.GLASER
APPRO.
REMPLACE/REPLACES
NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION
IND. 3
IND. | DATE | NOM/NAME | ZONE | MODIFICATION
7 6 5 4 3 2 1
e d c b a

GENERAL TOLERANCES GENERALES	DIMENSION	<=6	> 6	> 30	> 120	> 315	>1000	>2000
	USINAGE MOYEN/MEDIUM MACHINING	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
	MECANO. SOUDURE/WELDED STRUCTURE	± 0.5	± 1	± 2	± 3	± 5	± 7	± 10

DESSIN, RUGOSITE, TOLERANCES SELON NORMES ISO
DRAWING, RUGOSITY, TOLERANCES ACCORDING TO ISO STANDARDS

PROJECTION

DB50 Female Con-6

DB15 Female Con-5

DB9 Male Con-4

Sector connector 7 poles Con-3

220 AC Male Con-2

Lemo 2, 24 Con-1

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M1 Con-9

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M2 Con-10

1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -M3 Con-11

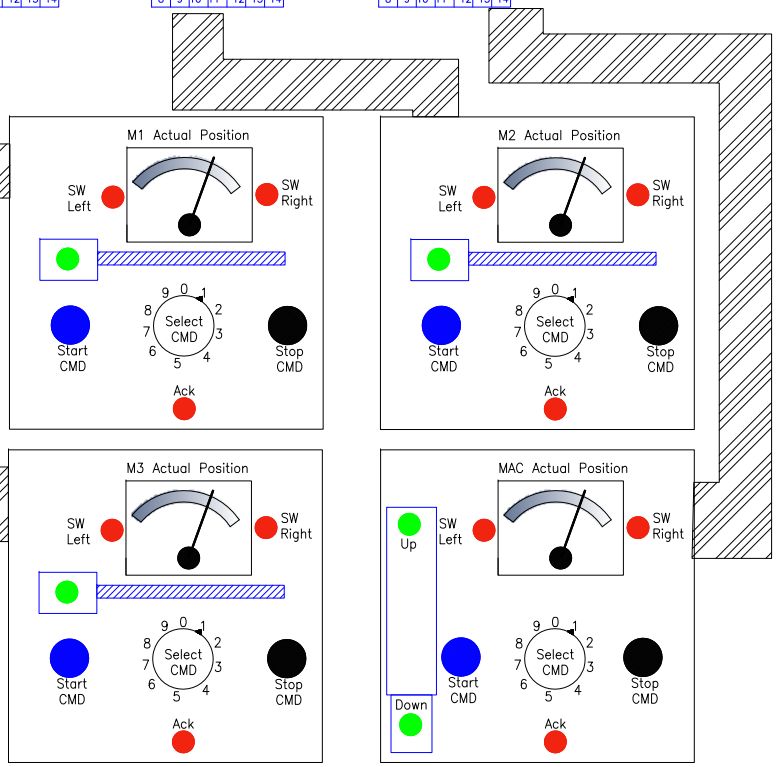
1	2	3	4	5	6	7
8	9	10	11	12	13	14

FLAT CABLE CONNECTOR Scem09.55.05.110.8 -AC Con-12

1	2	3	4	5	6	7
8	9	10	11	12	13	14

Connector Terminal Block Cable section 0.22 mm2 Con-14

C1, C2 and C3 is a flat cable connector Scem 09.55.05.120.6
Each block of 2x10 are separated by 5.08mm
(The all 3 blocs correspond to 2x32)



Connector Terminal Block Cable section 0.5 mm2 Con-8

CTB 1 mm2 Con-7

CTB 1 mm2 Con-13

C3

Ref-L3 C3-19	19	20	C3-20 Ref-R3
Ref-L2 C3-17	17	18	C3-18 Ref-R2
Ref-L1 C3-15	15	16	C3-16 Ref-R1
Rs232-Tx C3-13	13	14	C3-14 RS232-Rx
DOUT6 C3-11	11	12	C3-12 DOUT7
DOUT4-AC-UP C3-9	9	10	C3-10 DOUT5-AC-Down
DOUT2-IO Data C3-7	7	8	C3-8 DOUT3-IO-strobe
DOUT0-RTS C3-5	5	6	C3-6 DOUT1 IO-Clock
Gnd C3-3	3	4	C3-4 Gnd
VDD-15-48V C3-1	1	2	C3-2 VDD 15-48V

C2

RS485 + C2-19	19	20	C2-20 RS485 -
Opto 1 C2-17	17	18	C2-18 Opto 2
Gnd Opto 1 C2-15	15	16	C2-16 Gnd Opto 2
Gnd C2-13	13	14	C2-14 Shutdown
ADC-6 CMD M3 C2-11	11	12	C2-12 ADC-7 V AC
ADC-4 CMD M1 C2-9	9	10	C2-10 ADC-5 CMD M2
ADC-2 V M2 C2-7	7	8	C2-8 ADC-3 V M3
ADC-0 CMD AC C2-5	5	6	C2-6 ADC-1 V M1
Gnd C2-3	3	4	C2-4 Gnd
Vcc-5V C2-1	1	2	C2-2 M300-Vcc + 5V

C1

V Motor 15-48V C1-19	19	20	C1-20 V Motor 15-48V
GND C1-17	17	18	C1-18 GND
M3P2A C1-15	15	16	C1-16 M3P2B
M3P1A C1-13	13	14	C1-14 M3P1B
GND C1-11	11	12	C1-12 GND
M2P2A C1-9	9	10	C1-10 M2P2B
M2P1A C1-7	7	8	C1-8 M2P1B
GND C1-5	5	6	C1-6 GND
M1P2A C1-3	3	4	C1-4 M1P2B
M1P1A C1-1	1	2	C1-2 M1P1B

? Can be connected as you like on the Con5, I will do the correct connection on the table after you have made the board and fix the pin number.

QUANT.	DESCRIPTION	POS	MAT.	OBSERVATIONS	REF.CERN
	ENS/ASS		S.ENS/S.ASS		

Motors CMD Irradiation facilities

Vision and command panel

ECHELLE SCALE

	NOM/NAME	DATE
DES/DRA.	M.Glaser	12-06-2009
CONTROL.	M.GLASER	
APPRO.		

REMPLACE/REPLACES

NON VALABLE POUR EXECUTION
NOT VALID FOR EXECUTION

IND. 3

IND.	DATE	NOM/NAME	ZONE	MODIFICATION

7 6 5 4 3 2 1

e d c b a