to be applied in cell 1

current direction

nuclotron-type superconducting cable

QDo bus-bar

QDi bus-bar

F1o bus-bar

F1i bus-bar

Center of the synchrotron

By-pass line

Quadrupole Module

place for a superconducting joint

Quad F1

SV

SH

Quad QD

DS unit

US unit

Beam

Belegung SF2-IC und SQD-IC
siehe „F-DS-SCM-en-MT_
0137_Voltage_taps_bundles_
for_SIS100_QDMs_Vxxx.pdf

SF1-IC

SQD-IC

Thermalisation block

6(3x2)

2x2

8 (4x2)

6(3x2)

socket DEE 106A007-130
view of the soldering side
(Fischer Connectors)

SF1 socket
5 - VF11
4 - VF12
7 - VF15
6 - VF16
3 - VF13
2 - VF14
1 - nc

socket DEE 106A019-130
view of the soldering side
(Fischer Connectors)

SBQ socket
8 - VBQ5
7 - VBQ6
6 - VBQ7
5 - VBQ8
1 - VBQ4
2 - VBQ3
3 - VBQ2
4 - VBQ1

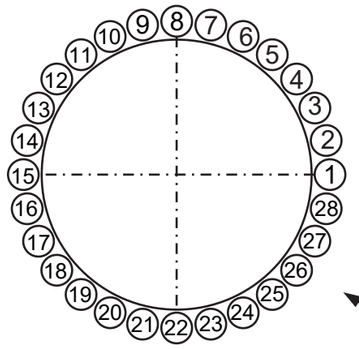
socket DEE 106A007-130
view of the soldering side
(Fischer Connectors)

SQD socket
3 - VQD3
2 - VQD4
5 - VQD1
4 - VQD2
7 - VQD5
6 - VQD6
1 - nc

Drawing Number	GSI-SIS100-QDM-2.123-001	Ver.	v06
Object	SIS100 Quadrupole Module 2.123 cell 1		Page 1 of 5
Circuit	Quadrupoles: F1/QD & voltage taps Busbars: F1, QD & voltage taps Sockets: SF1-IC, SQD-IC, SBQ, SF1 & SQD		
Author	P. Szwangruber (PBMT)	Date	2014-Nov-14
Revised	S.Lindner (SCM-MES)	Date	2024-Jan-11

Comments:

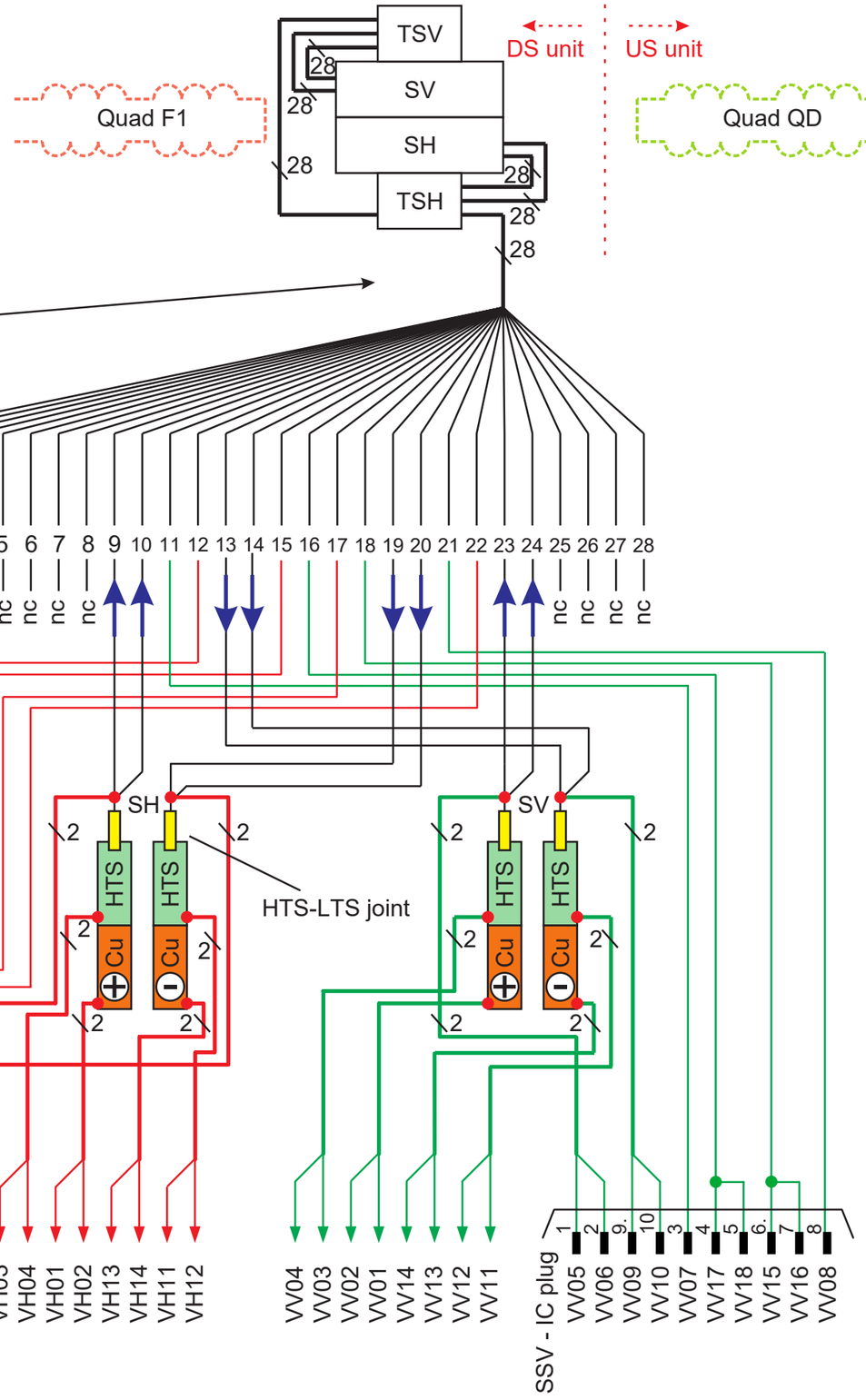
voltage tap wire: HH-2619-LH (Axon GmbH); each socket shall receive its own voltage tap bundle; each socket pin (soldering side) shall be covered by 30 mm of shrinking tube (type ATUM-3/1-0); for twisting of voltage tap wires see instrumentation list;
nc - not connected; **Attention: the connection of the module and voltage tap scheme is different for cell 1 and for cells 2 & 3**
(SH+SV) - steering magnet; DS/US – beam down stream/up stream direction;



superconducting corrector cable
(LTS, insulated strands)

Belegung SSH-IC, SSV-IC und SCS-IC siehe „F-DS-SCM-en-MT_0137_Voltage_taps_bundles_for_SIS100_QDMs_Vxxx.pdf

: current direction

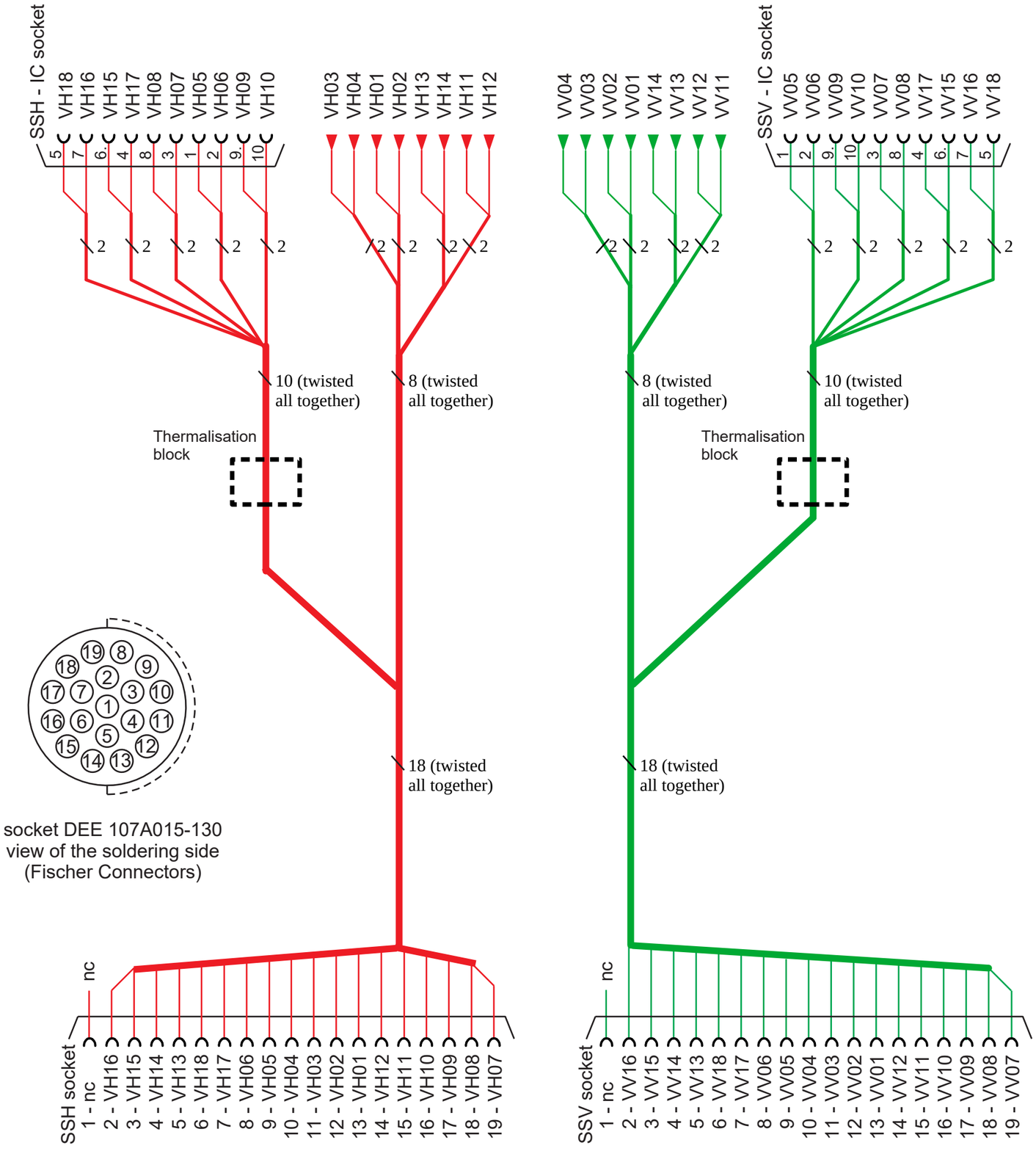


Drawing Number	GSI-SIS100-QDM-2.123-002	Ver.	v07
Object	SIS100 Quadrupole Module 2.123 cell 1		Page 2 of 5
Circuit	Steering magnet & bus-bar & voltage taps Local current leads & voltage taps Sockets: SSH-IC, SSV-IC		

Comments:

(SV+SH) - steering magnet: SV - vertical coil, SH - horizontal coil; (Cu+HTS) - local current lead;
TSV - terminal box for steerer vertical coil, TSH - terminal box for steerer horizontal coil;
nc - not connected; each socket shall receive its own voltage tap bundle; each socket pin (soldering side) shall be covered by 30 mm of shrinking tube (type ATUM-3/1-0); for twisting of voltage tap wires see instrumentation list; voltage tap wire: HH-2619-LH (Axon GmbH);

Author	P. Szwangruber (PBMT)	Date	2014-Nov-14
Revised	S.Lindner (SCM-MES)	Date	2024-Jan-11



Belegung SSH-IC und SSV-IC siehe „F-DS-SCM-en-MT_0137_Voltage_taps_bundles_for_SIS100_QDMs_Vxxx.pdf

Drawing Number	GSI-SIS100-QDM-2.123-003	Ver.	v05
Object	SIS100 Quadrupole Module 2.123 cell 1		Page 3 of 5
Circuit	Steering magnet & bus-bar & voltage taps Local current leads & voltage taps Sockets: SSH-IC, SSV-IC, SSH, SSV		

Comments: (SV+SH) - steering magnet: SV - vertical coil, SH - horizontal coil; (Cu+HTS) - local current lead;
nc - not connected; each socket shall receive its own voltage tap bundle; each socket pin (soldering side) shall be covered by 30 mm of shrinking tube (type ATUM-3/1-0); for twisting of voltage tap wires see instrumentation list; voltage tap wire: HH-2619-LH (Axon GmbH);

Author	P. Szwangruber (PBMT)	Date	2014-Nov-14
Revised	S.Lindner (SCM-MES)	Date	2024-Jan-10

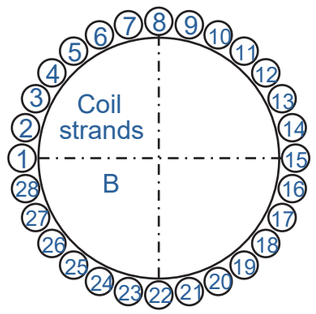
1	2	3	4	5	6	7	8	9	10

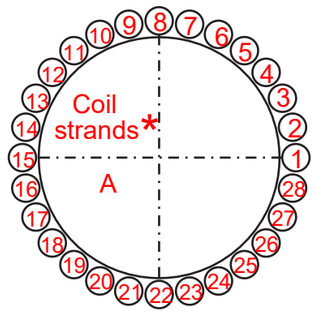
TSH

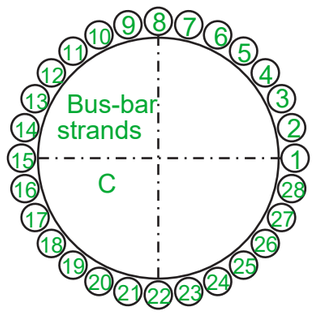
Solder number	Bus-bar strand C	Coil strand* (current input) A	Coil strand (current output) B	Comments	SMS connector PIN
1	9 and 10	1	-	Current "+" VH05 and VH06	1 and 2
2	-	2	28		
3	-	3	27		
4	-	4	26		
5	-	5	25		
6	-	6	24		
7	-	7	23		
8	12	8	22	"middle" Vtap VH08	8
9	-	9	21		
10	-	10	20		
11	-	11	19		
12	-	12	18		
13	-	13	17		
14	-	14	16		
15	15	-	15	MID : VH15 and VH16	6 and 7
16	17	15	-	MID : VH17 and VH18	4 and 5
17	19 and 20	-	14	Current "-" VH09 and VH10	9 and 10
18	-	16	13		
19	-	17	12		
20	-	18	11		
21	-	19	10		
22	-	20	9		
23	-	21	8		
24	22	22	7	"middle" Vtap VH07	3
25	-	23	6		
26	-	24	5		
27	-	25	4		
28	-	26	3		
29	-	27	2		
30	-	28	1		

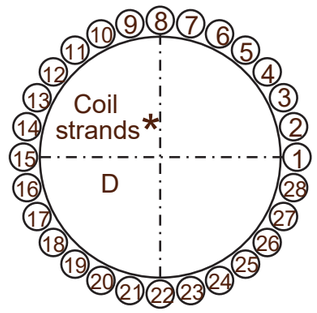
TSV

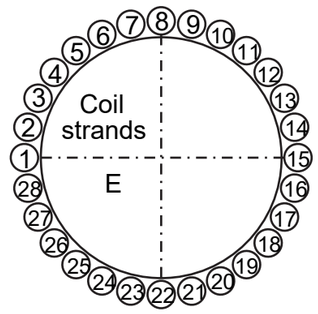
Solder number	Bus-bar strand C	Coil strand* (current input) D	Coil strand (current output) E	Comments	SMS connector PIN
1	23 and 24	1	-	Current "+" VV05 and VV06	1 and 2
2	-	2	28		
3	-	3	27		
4	-	4	26		
5	-	5	25		
6	-	6	24		
7	-	7	23		
8	21	8	22	"middle" Vtap VV08	8
9	-	9	21		
10	-	10	20		
11	-	11	19		
12	-	12	18		
13	-	13	17		
14	-	14	16		
15	18	-	15	MID : VV15 and VV16	6 and 7
16	16	15	-	MID : VV17 and VV18	4 and 5
17	13 and 14	-	14	Current "-" VV09 and VV10	9 and 10
18	-	16	13		
19	-	17	12		
20	-	18	11		
21	-	19	10		
22	-	20	9		
23	-	21	8		
24	11	22	7	"middle" Vtap VV07	3
25	-	23	6		
26	-	24	5		
27	-	25	4		
28	-	26	3		
29	-	27	2		
30	-	28	1		







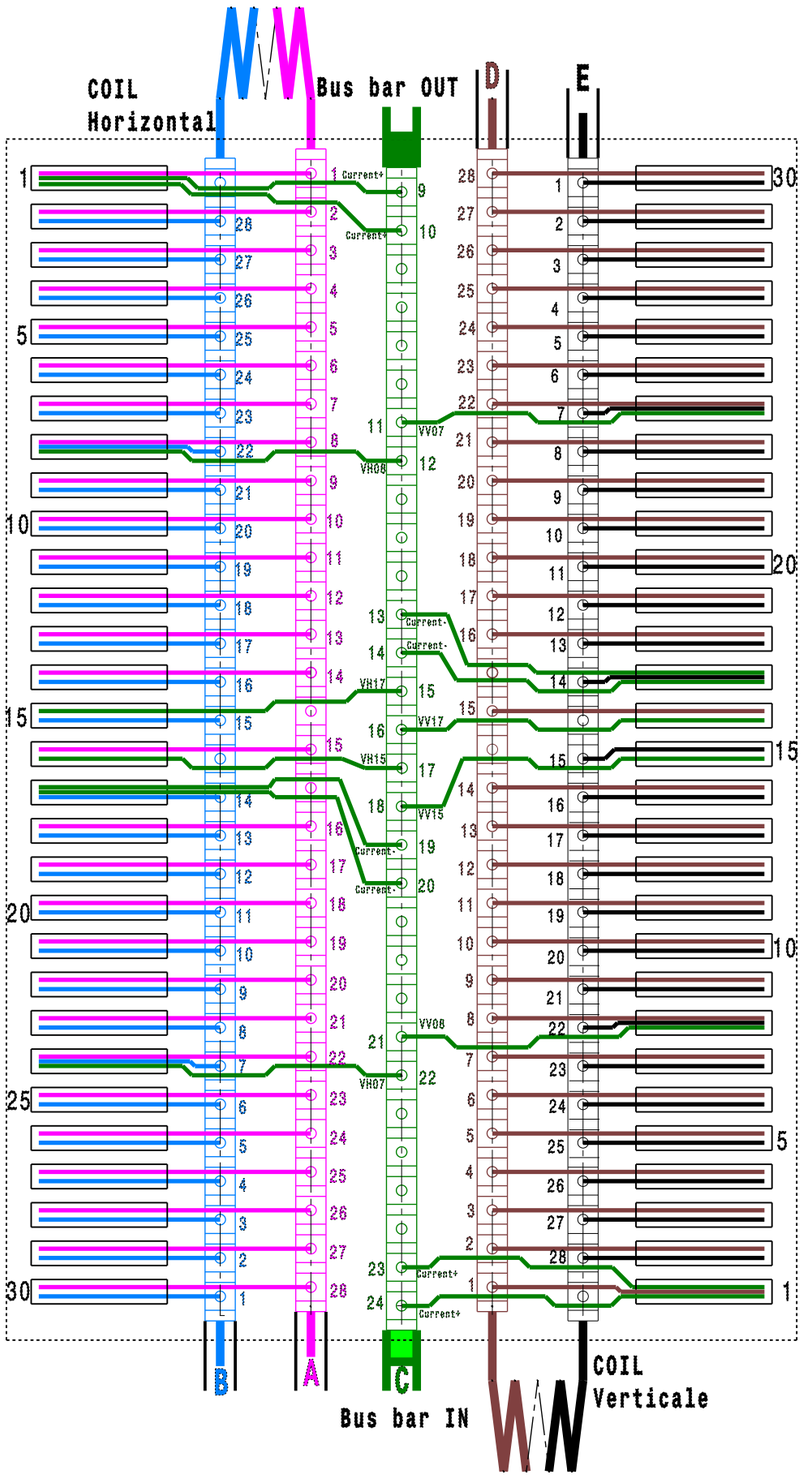


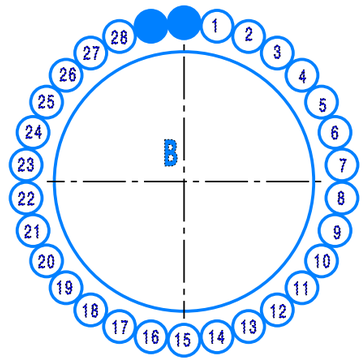


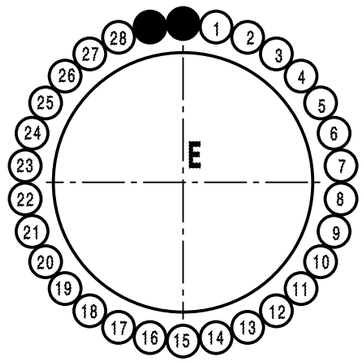
Drawing Number	GSI-SIS100-QDM-2.123-004	Ver.	v02
Object	SIS100 Quadrupole Module 2.123 cell 1		Page 4 of 5
Circuit	Connections in terminal boxes: TSH & TSV		

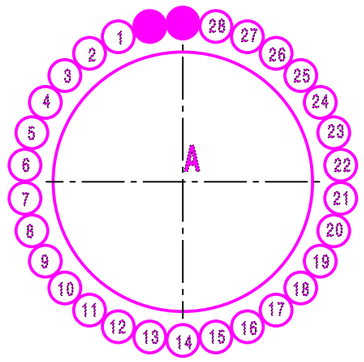
Comments:
(SV+SH) - steering magnet: SV - vertical coil, SH - horizontal coil;
TSV - terminal box for steerer vertical coil, TSH - terminal box for steerer horizontal coil;
for detail information (i.e. solder number) see technical drawing of the terminal box: F-DS-MT-53e;

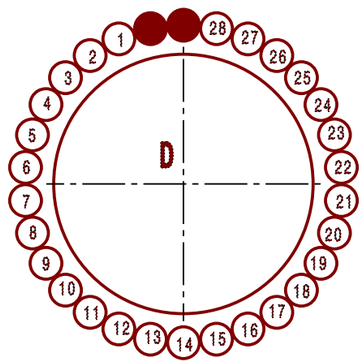
Author	P. Szwangruber (PBMT)	Date	2014-Nov-14
Revised	S.Lindner (SCM-MES)	Date	2024-Jan-11

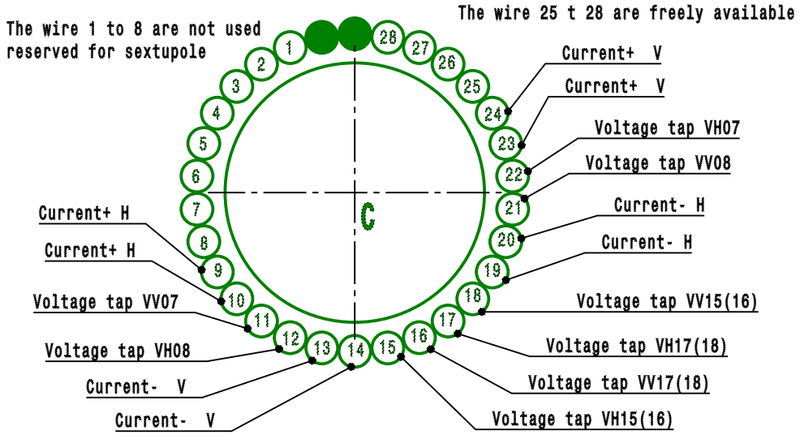












WIRING DIAGRAM
Twin-Terminal box
for Steerer magnet

06.07.2021

Drawing Number	GSI-SIS100-QDM-2.123-005	Ver.	v03
Object	SIS100 Quadrupole Module 2.123 cell 1		Page 5 of 5
Circuit	Connections in terminal boxes: TSH & TSV		

Comments:	(SV+SH) - steering magnet: SV - vertical coil, SH - horizontal coil; TSV - terminal box for steerer vertical coil, TSH - terminal box for steerer horizontal coil, for detail information (i.e. solder number) see technical drawing of the terminal box: F-DS-MT-53e;		
Author	P. Szwangruber (SCM-MES)	Date	2014-Nov-14
Revised	S.Lindner (SCM-MES)	Date	2026-Mai-29