

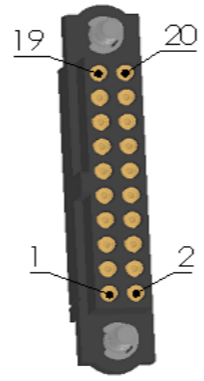
Cabling of the CMS BPIX temperature sensors and auxillary board

based on "Auxillary Board Cabling Documentation" by D.Wolff, University of Zurich

Author: Patrick Vogler, PSI / ETH Zurich
February 2017

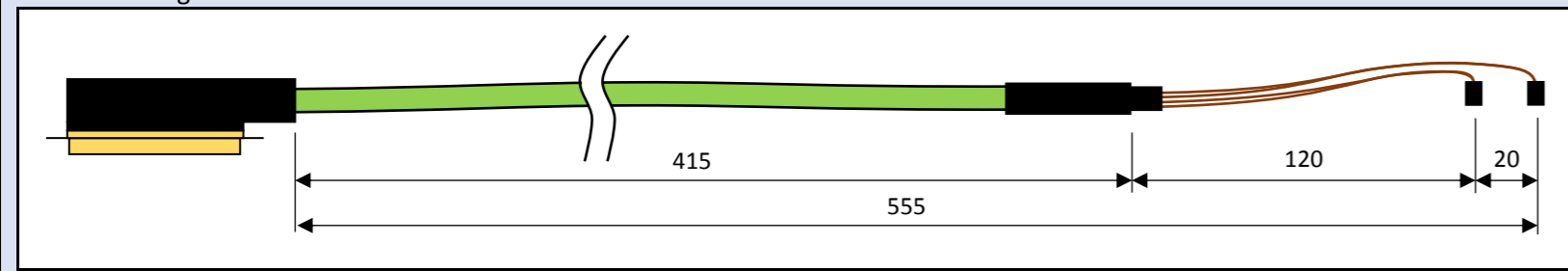
Bml

Cable W3: Slow Control (Temperature and Humidity Left)

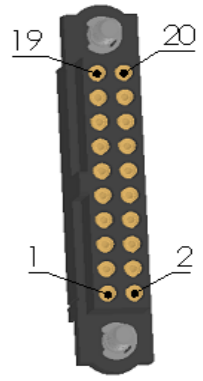
Left Connector			Cable BA 61994					Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View
		1	YE	TSC1+	YES		4R	1		
		20	GN	TSC1-			L1D2MN	2		
		2	YE	TSC2+	YES		4M	3		
		21	OR	TSC2-			L1D2MN	4		
		3	YE	TSC3+	YES		4V	5		
		22	BU	TSC3-			L1D2MN	6		
		4	BK	TSC4+	YES		5R	7		
		23	GY	TSC4-			L3D3MN	8		
		5	BK	TSC5+	YES		5M	9		
		24	BN	TSC5-			L3D3MN	10		
		6	BK	TSC6+	YES		5V	11		
		25	GN	TSC6-			L3D3MN	12		
		7	BK	TDC1+	YES		6R	13		
		26	OR	TDC1-			L4D4MN	14		
		8	BK	TDC2+	YES		6M	15		
		27	BU	TDC2-			L4D4MN	16		
		9	RD	TDC3+	YES		6V	17		
		28	GY	TDC3-			L4D4MN	18		
		10	RD	TE2+	YES	28	PT-1000 sensor Slot 1L (det)	1		
		29	BN	TE2-			PT-1000 sensor Slot 2L (inp)	2		
		11	RD	TE3+	YES		PT-1000 sensor Slot 2L (inp)	3		
		30	GN	TE3-			PT-1000 sensor Slot 2L (det)	4		
		12	RD	TE4+	YES		PT-1000 sensor Slot 2L (det)	5		
		31	OR	TE4-			PT-1000 sensor Slot 3L (inp)	6		
		13	RD	TE5+	YES		PT-1000 sensor Slot 3L (inp)	7		
		32	BU	TE5-			PT-1000 sensor Slot 3L (det)	8		
		14	WH	TE6+	YES		PT-1000 sensor Slot 3L (det)	9		
		33	GY	TE6-			PT-1000 sensor Slot 4L (inp)	10		
		15	WH	TE7+	YES		PT-1000 sensor Slot 4L (inp)	11		
		34	BN	TE7-			PT-1000 sensor Slot 4L (det)	12		
		16	WH	TE8+	YES		PT-1000 sensor Slot 4L (det)	13		
		35	GN	TE8-			HMX-2000 humidity sensor	14		
		17	WH	H+V	YES			15		
		36	OR	H-V				16		
		18	WH	H+Sig	YES			17		
		37	BU	H-Sig				18		
		19	-	drain	-		Shield	-		

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing

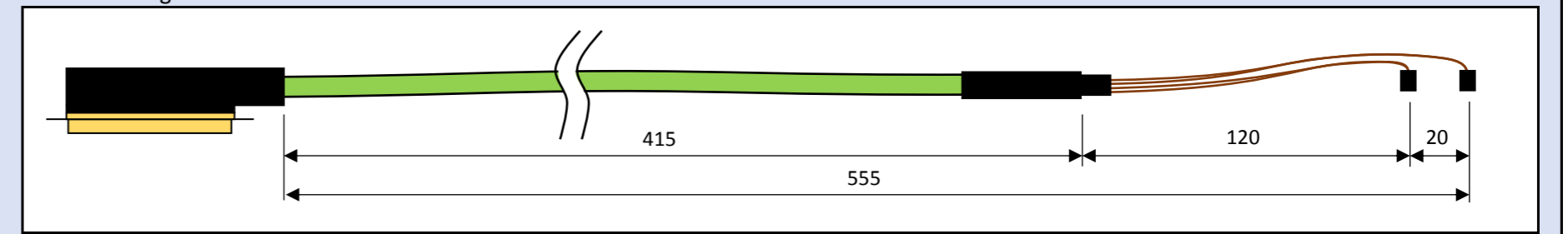


Cable W4: Slow Control (Temperature Right)

Left Connector			Cable BA 61994					Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View
		1	YE	TSC1+	YES		1V	1		
		20	GN	TSC1-			L4D2MN	2		
		2	YE	TSC2+	YES		1M	3		
		21	OR	TSC2-			L4D2MN	4		
		3	YE	TSC3+	YES		1R	5		
		22	BU	TSC3-			L4D2MN	6		
		4	BK	TSC4+	YES		2V	7		
		23	GY	TSC4-			L3D1MN	8		
		5	BK	TSC5+	YES		(n.c.) (none)	9		
		24	BN	TSC5-			2V	10		
		6	BK	TSC6+	YES		2V	11		
		25	GN	TSC6-			L3D1MN	12		
		7	BK	TDC1+	YES		3V	13		
		26	OR	TDC1-			L2D1MN	14		
		8	BK	TDC2+	YES		3M	15		
		27	BU	TDC2-			L2D1MN	16		
		9	RD	TDC3+	YES		3R	17		
		28	GY	TDC3-			L2D1MN	18		
		10	RD	TE2+	YES	28	PT-1000 sensor Slot 1L (det)	1		
		29	BN	TE2-			PT-1000 sensor Slot 2L (inp)	2		
		11	RD	TE3+	YES		PT-1000 sensor Slot 2L (inp)	3		
		30	GN	TE3-			PT-1000 sensor Slot 2L (det)	4		
		12	RD	TE4+	YES		PT-1000 sensor Slot 2L (det)	5		
		31	OR	TE4-			PT-1000 sensor Slot 3L (inp)	6		
		13	RD	TE5+	YES		PT-1000 sensor Slot 3L (inp)	7		
		32	BU	TE5-			PT-1000 sensor Slot 3L (det)	8		
		14	WH	TE6+	YES		PT-1000 sensor Slot 3L (det)	9		
		33	GY	TE6-			PT-1000 sensor Slot 4L (inp)	10		
		15	WH	TE7+	YES		PT-1000 sensor Slot 4L (inp)	11		
		34	BN	TE7-			PT-1000 sensor Slot 4L (det)	12		
		16	WH	TE8+	YES		PT-1000 sensor Slot 4L (det)	13		
		35	GN	TE8-			PT-1000 sensor Adapter Temp R	14		
		17	WH	TgasTS+	YES		PT-1000 sensor Adapter Temp R	15		
		36	OR	TgasTS-			PT-1000 sensor H-Sense Temp	16		
		18	WH	TgasH+	YES			17		
		37	BU	TgasH-				18		
		19	-	drain	-		Shield	-		

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing



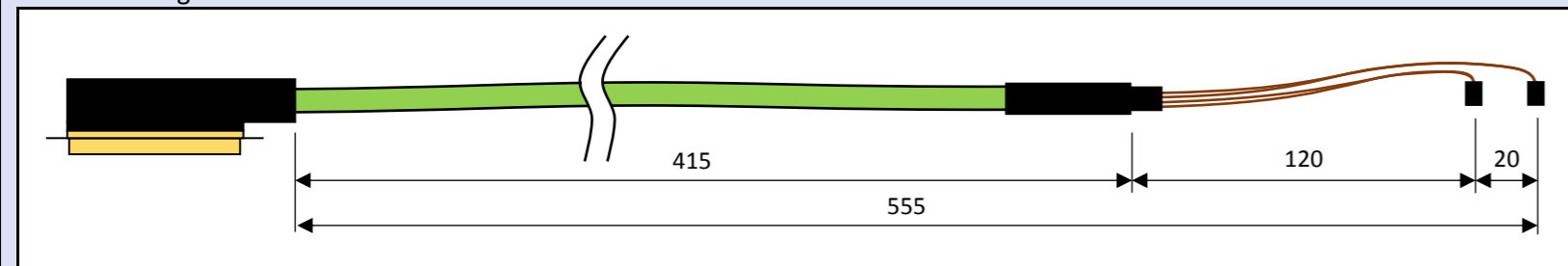
Bpl

Cable W3: Slow Control (Temperature and Humidity Left)

Left Connector			Cable BA 61994					Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View
		1	YE	TSC1+	YES		3V	1		X9
		20	GN	TSC1-			L1D1PN	2		
		2	YE	TSC2+	YES		(n.c.)	3		
		21	OR	TSC2-			(none)	4		
		3	YE	TSC3+	YES		3R	5		
		22	BU	TSC3-			L1D1PN	6		
		4	BK	TSC4+	YES		2V	7		
		23	GY	TSC4-			L3D2PN	8		
		5	BK	TSC5+	YES		2M	9		
		24	BN	TSC5-			L3D2PN	10		
		6	BK	TSC6+	YES		2R	11		
		25	GN	TSC6-			L3D2PN	12		
		7	BK	TDC1+	YES		1V	13		
		26	OR	TDC1-			L4D1PN	14		
		8	BK	TDC2+	YES		1M	15		
		27	BU	TDC2-			L4D1PN	16		
		9	RD	TDC3+	YES		1R	17		
		28	GY	TDC3-			L4D1PN	18		
		10	RD	TE2+	YES	28	PT-1000 sensor	1		
		29	BN	TE2-			Slot 1L (det)	2		
		11	RD	TE3+	YES		PT-1000 sensor	3		
		30	GN	TE3-			Slot 2L (inp)	4		
		12	RD	TE4+	YES		PT-1000 sensor	5		
		31	OR	TE4-			Slot 2L (det)	6		
		13	RD	TE5+	YES		PT-1000 sensor	7		
		32	BU	TE5-			Slot 3L (inp)	8		
		14	WH	TE6+	YES		PT-1000 sensor	9		
		33	GY	TE6-			Slot 3L (det)	10		
		15	WH	TE7+	YES		PT-1000 sensor	11		
		34	BN	TE7-			Slot 4L (inp)	12		
		16	WH	TE8+	YES		PT-1000 sensor	13		
		35	GN	TE8-			Slot 4L (det)	14		
		17	WH	H+V	YES		HMX-2000 humidity sensor	15		
		36	OR	H-V					16	
		18	WH	H+Sig	YES			17		
		37	BU	H-Sig					18	
		19	-	drain	-		Shield	-		

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing

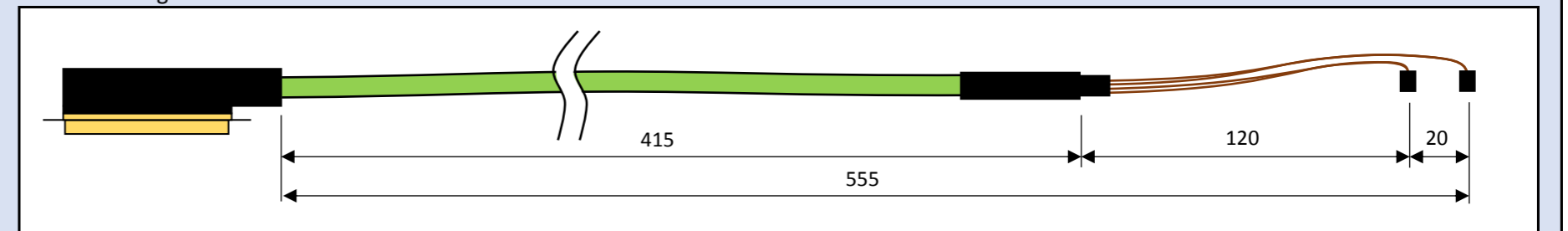


Cable W4: Slow Control (Temperature Right)

Left Connector			Cable BA 61994					Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View
		1	YE	TSC1+	YES		6V	1		
		20	GN	TSC1-			L4D3PN	2		
		2	YE	TSC2+	YES		6M	3		
		21	OR	TSC2-			L4D3PN	4		
		3	YE	TSC3+	YES		6R	5		
		22	BU	TSC3-			L4D3PN	6		
		4	BK	TSC4+	YES		5V	7		
		23	GY	TSC4-			L3D4PN	8		
		5	BK	TSC5+	YES		5M	9		
		24	BN	TSC5-			L3D4PN	10		
		6	BK	TSC6+	YES		5R	11		
		25	GN	TSC6-			L3D4PN	12		
		7	BK	TDC1+	YES		4V	13		
		26	OR	TDC1-			L2D2PN	14		
		8	BK	TDC2+	YES		4M	15		
		27	BU	TDC2-			L2D2PN	16		
		9	RD	TDC3+	YES		4R	17		
		28	GY	TDC3-			L2D2PN	18		
		10	RD	TE2+	YES	28	PT-1000 sensor	1		
		29	BN	TE2-			Slot 1L (det)	2		
		11	RD	TE3+	YES		PT-1000 sensor	3		
		30	GN	TE3-			Slot 2L (inp)	4		
		12	RD	TE4+	YES		PT-1000 sensor	5		
		31	OR	TE4-			Slot 2L (det)	6		
		13	RD	TE5+	YES		PT-1000 sensor	7		
		32	BU	TE5-			Slot 3L (inp)	8		
		14	WH	TE6+	YES		PT-1000 sensor	9		
		33	GY	TE6-			Slot 3L (det)	10		
		15	WH	TE7+	YES		PT-1000 sensor	11		
		34	BN	TE7-			Slot 4L (inp)	12		
		16	WH	TE8+	YES		PT-1000 sensor	13		
		35	GN	TE8-			Slot 4L (det)	14		
		17	WH	TgasTS+	YES		PT-1000 sensor	15		
		36	OR	TgasTS-			Adapter Temp R	16		
		18	WH	TgasH+	YES		PT-1000 sensor	17		
		37	BU	TgasH-			H-Sense Temp	18		
		19	-	drain	-		Shield	-		

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing



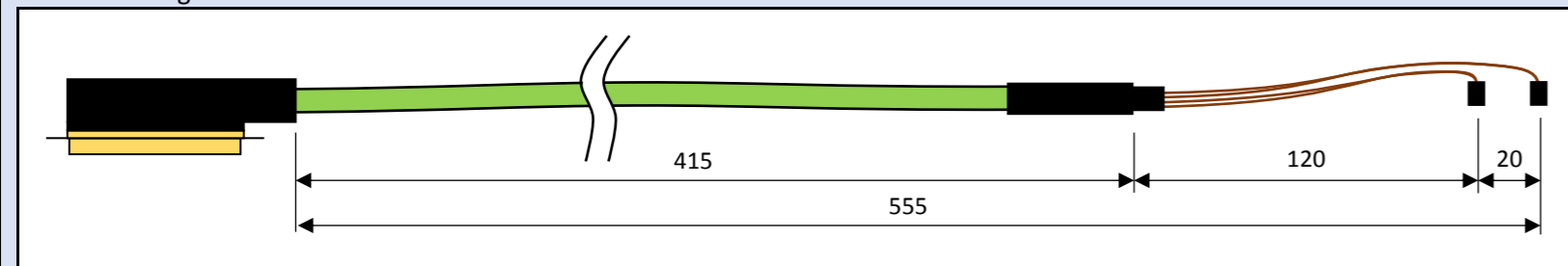
BpO

Cable W3: Slow Control (Temperature and Humidity Left)

Left Connector			Cable BA 61994						Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View	
		1	YE	TSC1+	YES		4V	1		X9	
		20	GN	TSC1-			L1D2PF	2			
		2	YE	TSC2+	YES		(n.c.)	3			
		21	OR	TSC2-			(none)	4			
		3	YE	TSC3+	YES		4R	5			
		22	BU	TSC3-			L1D2PF	6			
		4	BK	TSC4+	YES		5V	7			
		23	GY	TSC4-			L3D3PF	8			
		5	BK	TSC5+	YES		5M	9			
		24	BN	TSC5-			L3D3PF	10			
		6	BK	TSC6+	YES		5R	11			
		25	GN	TSC6-			L3D3PF	12			
		7	BK	TDC1+	YES		6V	13			
		26	OR	TDC1-			L4D4PF	14			
		8	BK	TDC2+	YES		6M	15			
		27	BU	TDC2-			L4D4PF	16			
		9	RD	TDC3+	YES		6R	17			
		28	GY	TDC3-			L4D4PF	18			
		10	RD	TE2+	YES	28	PT-1000 sensor	1			
		29	BN	TE2-			Slot 1L (det)	2			
		11	RD	TE3+	YES		PT-1000 sensor	3			
		30	GN	TE3-			Slot 2L (inp)	4			
		12	RD	TE4+	YES		PT-1000 sensor	5			
		31	OR	TE4-			Slot 2L (det)	6			
		13	RD	TE5+	YES		PT-1000 sensor	7			
		32	BU	TE5-			Slot 3L (inp)	8			
		14	WH	TE6+	YES		PT-1000 sensor	9			
		33	GY	TE6-			Slot 3L (det)	10			
		15	WH	TE7+	YES		PT-1000 sensor	11			
		34	BN	TE7-			Slot 4L (inp)	12			
		16	WH	TE8+	YES		PT-1000 sensor	13			
		35	GN	TE8-			Slot 4L (det)	14			
		17	WH	H+V	YES		HMX-2000 humidity sensor	15			
		36	OR	H-V					16		
		18	WH	H+Sig	YES			17			
		37	BU	H-Sig					18		
		19	-	drain	-		Shield	-			

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing

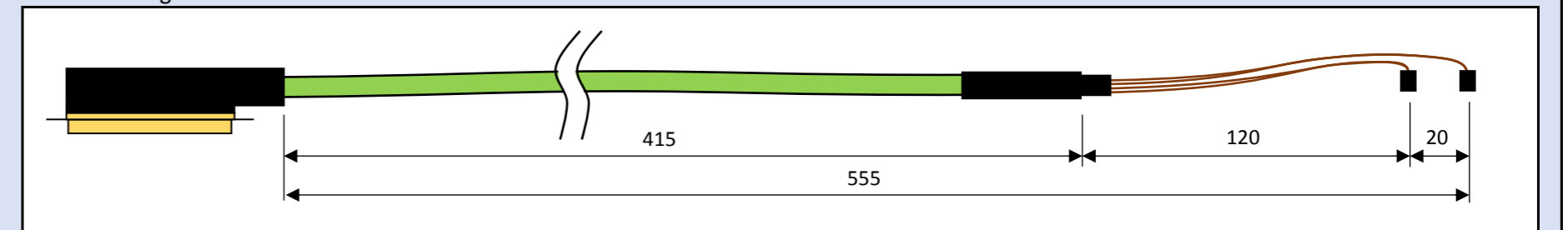


Cable W4: Slow Control (Temperature Right)

Left Connector			Cable BA 61994						Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View	
		1	YE	TSC1+	YES		1V	1			
		20	GN	TSC1-			L4D2PF	2			
		2	YE	TSC2+	YES		1M	3			
		21	OR	TSC2-			L4D2PF	4			
		3	YE	TSC3+	YES		1R	5			
		22	BU	TSC3-			L4D2PF	6			
		4	BK	TSC4+	YES		2V	7			
		23	GY	TSC4-			L3D1PF	8			
		5	BK	TSC5+	YES		2M	9			
		24	BN	TSC5-			L3D1PF	10			
		6	BK	TSC6+	YES		2R	11			
		25	GN	TSC6-			L3D1PF	12			
		7	BK	TDC1+	YES		3V	13			
		26	OR	TDC1-			L2D1PF	14			
		8	BK	TDC2+	YES		3M	15			
		27	BU	TDC2-			L2D1PF	16			
		9	RD	TDC3+	YES		3R	17			
		28	GY	TDC3-			L2D1PF	18			
		10	RD	TE2+	YES	28	PT-1000 sensor	1			
		29	BN	TE2-			Slot 1L (det)	2			
		11	RD	TE3+	YES		PT-1000 sensor	3			
		30	GN	TE3-			Slot 2L (inp)	4			
		12	RD	TE4+	YES		PT-1000 sensor	5			
		31	OR	TE4-			Slot 2L (det)	6			
		13	RD	TE5+	YES		PT-1000 sensor	7			
		32	BU	TE5-			Slot 3L (inp)	8			
		14	WH	TE6+	YES		PT-1000 sensor	9			
		33	GY	TE6-			Slot 3L (det)	10			
		15	WH	TE7+	YES		PT-1000 sensor	11			
		34	BN	TE7-			Slot 4L (inp)	12			
		16	WH	TE8+	YES		PT-1000 sensor	13			
		35	GN	TE8-			Slot 4L (det)	14			
		17	WH	TgasTS+	YES		PT-1000 sensor	15			
		36	OR	TgasTS-			Adapter Temp R	16			
		18	WH	TgasH+	YES		PT-1000 sensor	17			
		37	BU	TgasH-			H-Sense Temp	18			
		19	-	drain	-		Shield	-			

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing



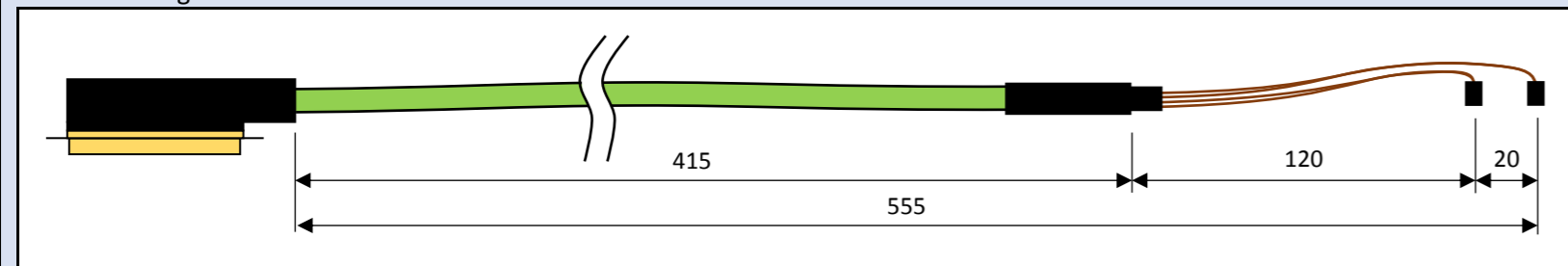
BmO

Cable W3: Slow Control (Temperature and Humidity Left)

Left Connector			Cable BA 61994					Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View
		1	YE	TSC1+	YES		3:L1F1	1		
		20	GN	TSC1-			???	2		
		2	YE	TSC2+	YES		3M	3		
		21	OR	TSC2-			L1D1MF	4		
		3	YE	TSC3+	YES		3:L1F1	5		
		22	BU	TSC3-			???	6		
		4	BK	TSC4+	YES		2R	7		
		23	GY	TSC4-			L3D2MF	8		
		5	BK	TSC5+	YES		2M	9		
		24	BN	TSC5-			L3D2MF	10		
		6	BK	TSC6+	YES		2V	11		
		25	GN	TSC6-			L3D2MF	12		
		7	BK	TDC1+	YES		1V	13		
		26	OR	TDC1-			L4D1MF	14		
		8	BK	TDC2+	YES		M1M6 ?	15		
		27	BU	TDC2-			???	16		
		9	RD	TDC3+	YES		1R	17		
		28	GY	TDC3-			L4D1MF	18		
		10	RD	TE2+	YES		PT-1000 sensor	1		
		29	BN	TE2-			Slot 1L (det)	2		
		11	RD	TE3+	YES		PT-1000 sensor	3		
		30	GN	TE3-			Slot 2L (inp)	4		
		12	RD	TE4+	YES		PT-1000 sensor	5		
		31	OR	TE4-			Slot 2L (det)	6		
		13	RD	TE5+	YES		PT-1000 sensor	7		
		32	BU	TE5-			Slot 3L (inp)	8		
		14	WH	TE6+	YES		PT-1000 sensor	9		
		33	GY	TE6-			Slot 3L (det)	10		
		15	WH	TE7+	YES		PT-1000 sensor	11		
		34	BN	TE7-			Slot 4L (inp)	12		
		16	WH	TE8+	YES		PT-1000 sensor	13		
		35	GN	TE8-			Slot 4L (det)	14		
		17	WH	H+V	YES		HMX-2000 humidity sensor	15		
		36	OR	H-V					16	
		18	WH	H+Sig	YES		HMX-2000 humidity sensor	17		
		37	BU	H-Sig					18	
		19	-	drain	-		Shield	-		

Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing

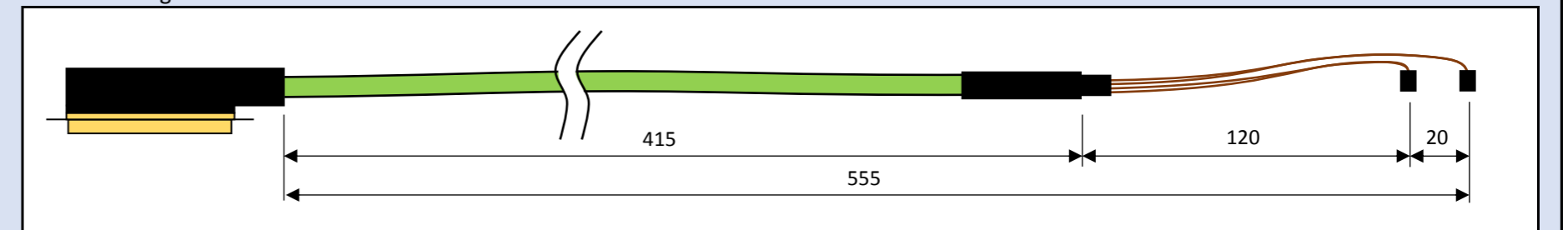


Cable W4: Slow Control (Temperature Right)

Left Connector			Cable BA 61994					Right Connector		
PPO	PPO	Pin	Color	Signal	twist	AWG	Function	Pin	AUX	Bottom View
		1	YE	TSC1+	YES		6V	1		
		20	GN	TSC1-			L4D3MF	2		
		2	YE	TSC2+	YES		M6M1?	3		
		21	OR	TSC2-			???	4		
		3	YE	TSC3+	YES		R6	5		
		22	BU	TSC3-			L4D3MF	6		
		4	BK	TSC4+	YES		5V	7		
		23	GY	TSC4-			L3D4MF	8		
		5	BK	TSC5+	YES		5M	9		
		24	BN	TSC5-			L3D4MF	10		
		6	BK	TSC6+	YES		5R	11		
		25	GN	TSC6-			L3D4MF	12		
		7	BK	TDC1+	YES		4V	13		
		26	OR	TDC1-			L2D2MF	14		
		8	BK	TDC2+	YES		4M	15		
		27	BU	TDC2-			L2D2MF	16		
		9	RD	TDC3+	YES		4R	17		
		28	GY	TDC3-			L2D2MF	18		
		10	RD	TE2+	YES		PT-1000 sensor	1		
		29	BN	TE2-			Slot 1L (det)	2		
		11	RD	TE3+	YES		PT-1000 sensor	3		
		30	GN	TE3-			Slot 2L (inp)	4		
		12	RD	TE4+	YES		PT-1000 sensor	5		
		31	OR	TE4-			Slot 2L (det)	6		
		13	RD	TE5+	YES		PT-1000 sensor	7		
		32	BU	TE5-			Slot 3L (inp)	8		
		14	WH	TE6+	YES		PT-1000 sensor	9		
		33	GY	TE6-			Slot 3L (det)	10		
		15	WH	TE7+	YES		PT-1000 sensor	11		
		34	BN	TE7-			Slot 4L (inp)	12		
		16	WH	TE8+	YES		PT-1000 sensor	13		
		35	GN	TE8-			Slot 4L (det)	14		
		17	WH	TgasTS+	YES		PT-1000 sensor	15		
		36	OR	TgasTS-			Adapter Temp R	16		
		18	WH	TgasH+	YES		PT-1000 sensor	17		
		37	BU	TgasH-			H-Sense Temp	18		
		19	-	drain	-		Shield	-		

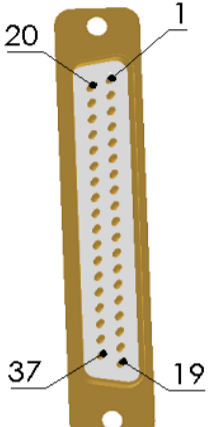
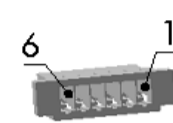
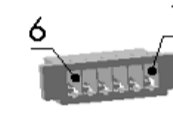
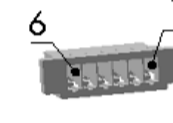
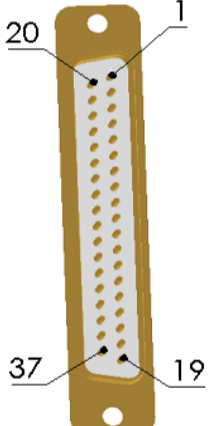
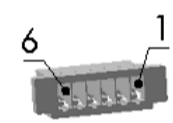
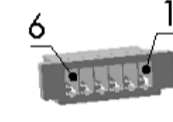
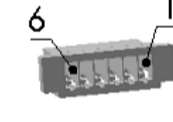
Attention, the connection of the wires in the 37-Dsub connector could be faulty!

Cable Drawing



Link between Input Cable and "Sensor-Adapter Board" for PT-1000 elements

Bpl: Near Side Z+

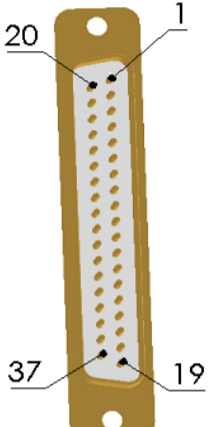
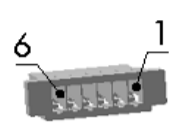
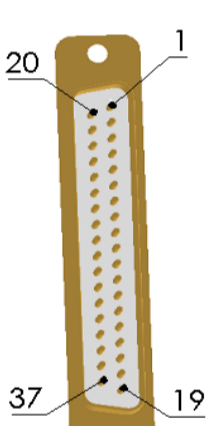
Input Connector			Function	Output Connector		
Rear View	Con	Pin		Pin	Con	Rear View
left: Top 	3110	1	3V	1L	1	X5 
		20	L1D1PN	2L	2	
		2	(n.c.)	3L	3	
		21	(none)	4L	4	
		3	3R	5L	5	
		22	L1D1PN	6L	6	
		4	2V	7L	1	X6 
		23	L3D2PN	8L	2	
		5	2M	9L	3	
		24	L3D2PN	10L	4	
		6	2R	11L	5	
		25	L3D2PN	12L	6	
7	1V	13L	1	X7 		
26	L4D1PN	14L	2			
8	1M	15L	3			
27	L4D1PN	16L	4			
9	1R	17L	5			
28	L4D1PN	18L	6			
right: Bottom 	3109	1	6V	7R	1	X8 
		20	L4D3PN	8R	2	
		2	6M	9R	3	
		21	L4D3PN	10R	4	
		3	6R	11R	5	
		22	L4D3PN	12R	6	
		4	5V	13R	1	X9 
		23	L3D4PN	14R	2	
		5	5M	15R	3	
		24	L3D4PN	16R	4	
		6	5R	17R	5	
		25	L3D4PN	18R	6	
7	4V	19R	1	X10 		
26	L2D2PN	20R	2			
8	4M	21R	3			
27	L2D2PN	22R	4			
9	4R	23R	5			
28	L2D2PN	24R	6			

Loop No. 1, ..., 6 from top to bottom

V: Inlet ("Vorlauf")
M: middle of the loop
R: Return

Link between Input Cable and "Sensor-Adapter Board" for PT-1000 elements

Bml: Near Side Z-

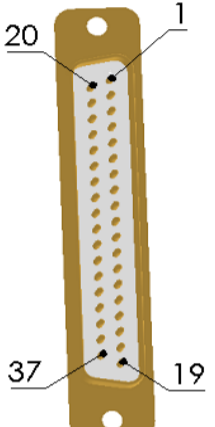
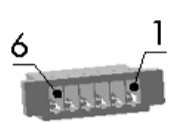
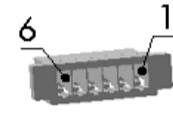
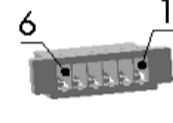
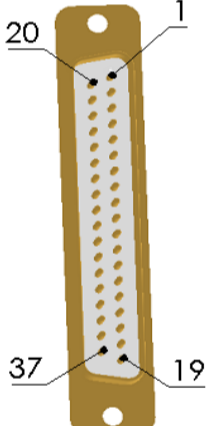
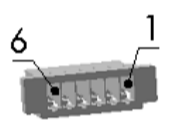
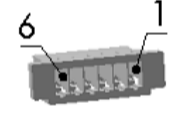
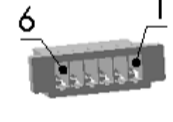
Input Connector			Function	Output Connector		
Rear View	Con	Pin		Pin	Con	Rear View
left: Bottom 	3104	1	4R	1L	1	
		20	L1D2MN			
		2	4M	3L	5	
		21	L1D2MN			
		3	4V	5L	3	
		22	L1D2MN			
		4	5R	7L	1	
		23	L3D3MN			8L
		5	5M	9L	5	
		24	L3D3MN			7R
		6	5V	8R	3	
		25	L3D3MN			9R
7	6R	4R	1			
26	L4D4MN			5R	3	
8	6M	6R	5			
27	L4D4MN			1R	1	
9	6V	2R	3			
28	L4D4MN			3R	5	
right: Top 	3105	1	1V			4R
		20	L4D2MN	5R	3	
		2	1M			6R
		21	L4D2MN	1R	1	
		3	1R			2R
		22	L4D2MN	3R	5	
		4	2V			1R
		23	L3D1MN	2R	3	
		5	(n.c.)			3R
		24	(none)	1R	1	
		6	2V			2R
		25	L3D1MN	3R	5	
7	3V	1R	1			
26	L2D1MN			2R	3	
8	3M	3R	5			
27	L2D1MN			1R	1	
9	3R	2R	3			
28	L2D1MN			3R	5	

Loop No. 1, ..., 6 from top to bottom

V: Inlet ("Vorlauf")
M: middle of the loop
R: Return

Link between Input Cable and "Sensor-Adapter Board" for PT-1000 elements

BpO: Far Side Z+

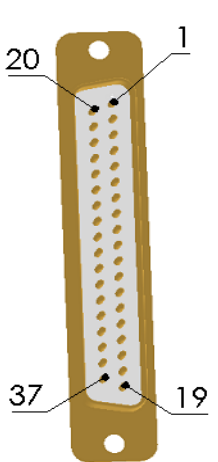
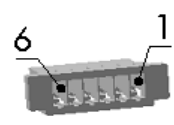
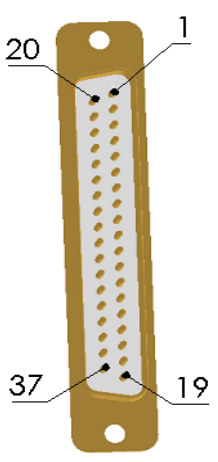
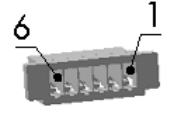
Input Connector			Function	Output Connector				
Rear View	Con	Pin		Pin	Con	Rear View		
left: Bottom 	3108	1	4V	1L	X5			
		20	L1D2PF				1	2
		2	(n.c.)				2L	3
		21	(none)					4
		3	4R				3L	5
		22	L1D2PF					6
		4	5V	4L	1	X6		
		23	L3D3PF		2			
		5	5M	5L	3			
		24	L3D3PF		4			
		6	5R	6L	5			
		25	L3D3PF		6			
7	6V	7L	1	X7				
26	L4D4PF		2					
8	6M	8L	3					
27	L4D4PF		4					
9	6R	9L	5					
28	L4D4PF		6					
right: Top 	3106	1	1V	7R	X8			
		20	L4D2PF				2	
		2	1M	8R			3	
		21	L4D2PF				4	
		3	1R	9R			5	
		22	L4D2PF				6	
		4	2V	4R	1	X9		
		23	L3D1PF		2			
		5	2M	5R	3			
		24	L3D1PF		4			
		6	2R	6R	5			
		25	L3D1PF		6			
7	3V	1R	1	X10				
26	L2D1PF		2					
8	3M	2R	3					
27	L2D1PF		4					
9	3R	3R	5					
28	L2D1PF		6					

Loop No. 1, ..., 6 from top to bottom

V: Inlet ("Vorlauf")
M: middle of the loop
R: Return

Link between Input Cable and "Sensor-Adapter Board" for PT-1000 elements

BmO: Far Side Z-

Input Connector			Function	Output Connector				
Rear View	Con	Pin		Pin	Con	Rear View		
left: Top 	3101	1	3:L1F1	1L	X5			
		20	???				2	
		2	3M				2L	3
		21	L1D1MF				4	
		3	3:L1F1	3L	5			
		22	???	6				
		4	2R	4L	1			
		23	L3D2MF	2				
		5	2M	5L	3			
		24	L3D2MF	4				
		6	2V	6L	5			
		25	L3D2MF	6				
		7	1V	7L	1			
		26	L4D1MF	2				
8	M1M6 ?	8L	3					
27	???	4						
9	1R	9L	5					
28	L4D1MF	6						
right: Bottom 	3107	1	6V	7R	1	X8		
		20	L4D3MF	2				
		2	M6M1?	8R	3			
		21	???	4				
		3	R6	9R	5			
		22	L4D3MF	6				
		4	5V	4R	1			
		23	L3D4MF	2				
		5	5M	5R	3			
		24	L3D4MF	4				
		6	5R	6R	5			
		25	L3D4MF	6				
		7	4V	1R	1			
		26	L2D2MF	2				
8	4M	2R	3					
27	L2D2MF	4						
9	4R	3R	5					
28	L2D2MF	6						

Loop No. 1, ..., 6 from top to bottom

V: Inlet ("Vorlauf")
M: middle of the loop
R: Return

Several Pt1000 could not assigned without ambiguity.

Layer 1 on X5: inlet / outlet not clear

M1M6 ? and M6M1 ? It is not clear which belongs to the first and which to the last loop

CO2 Cooling Layout

BmI

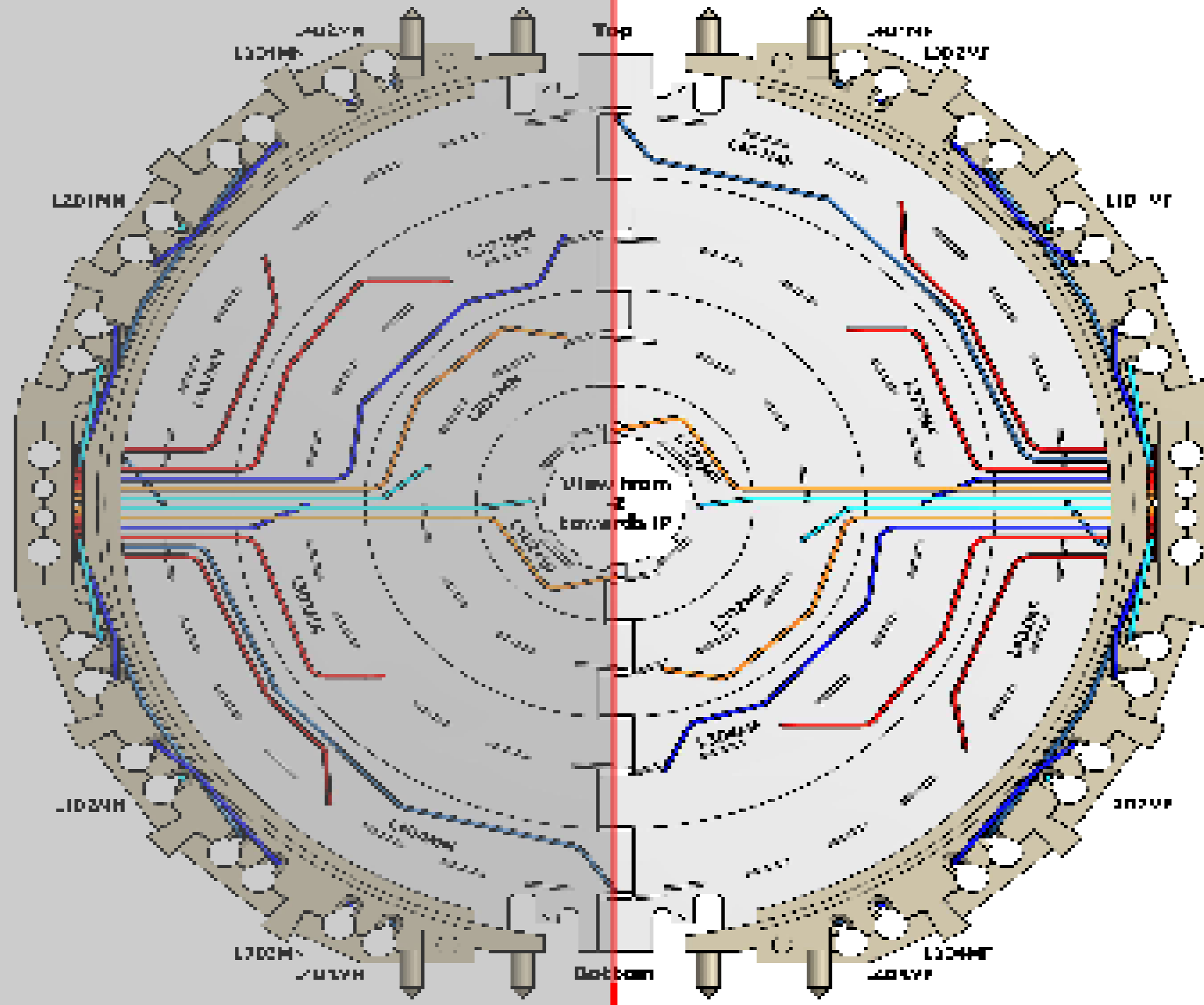
BmO

1	L4-D2-MN
2	L3-D1-MN
3	L2-D1-MN

1	L4-D1-MF
2	L3-D2-MF
3	L1-D1-MF

4	L1-D2-MN
5	L3-D3-MN
6	L4-D4-MN

4	L2-D2-MF
5	L3-D4-MF
6	L4-D3-MF



BmI

BmO

BpO

CO2 Cooling Layout

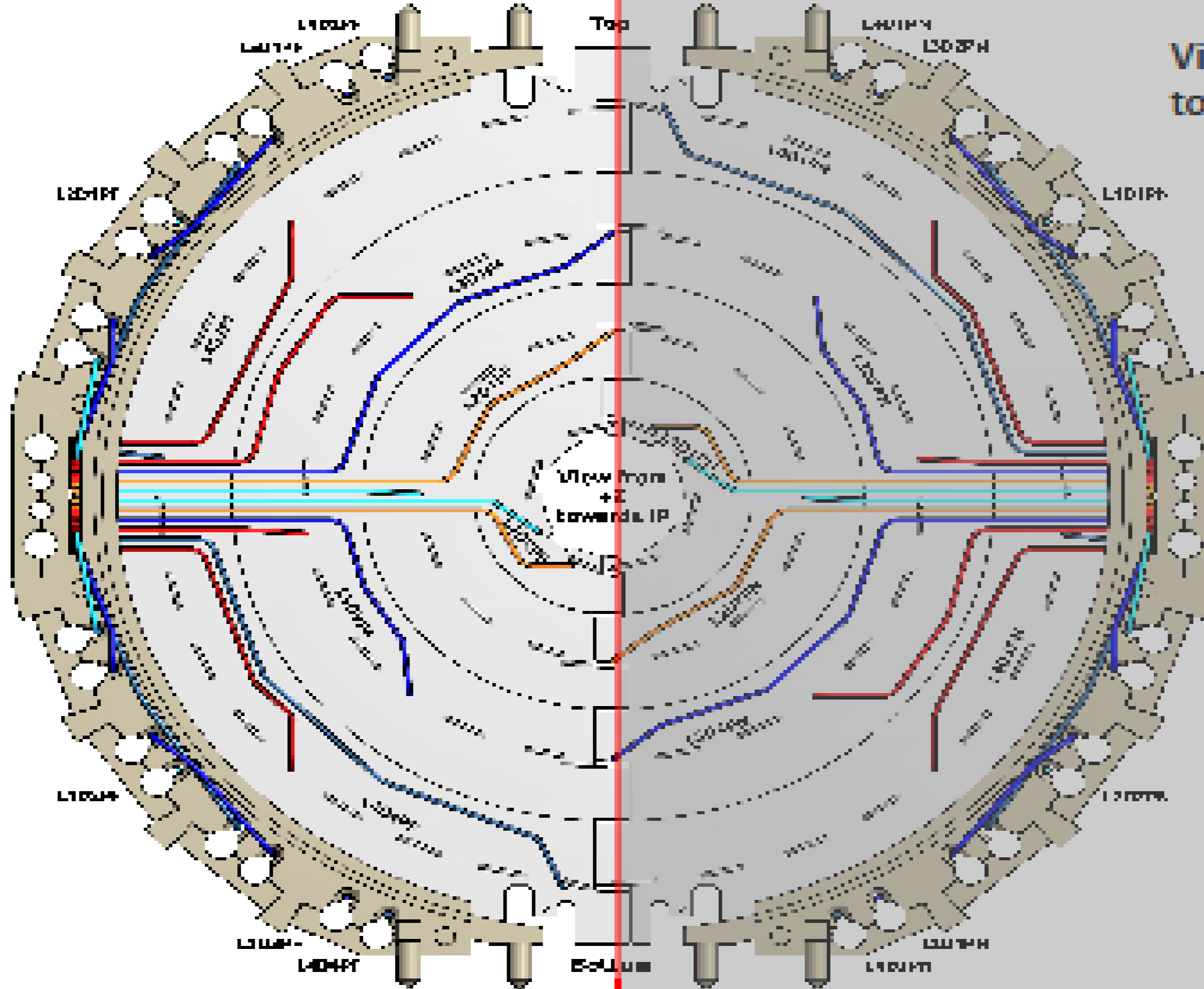
BpI

View from +Z end
toward IP

1	L4-D2-PF
2	L3-D1-PF
3	L2-D1-PF

IP ← +Z

4	L1-D2-PF
5	L3-D3-PF
6	L4-D4-PF



1	L4-D1-PN
2	L3-D2-PN
3	L1-D1-PN

+Z ← +Y

4	L2-D2-PN
5	L3-D4-PN
6	L4-D3-PN

BpO

BpI

CO2 Cooling Layout

BpO

BpI

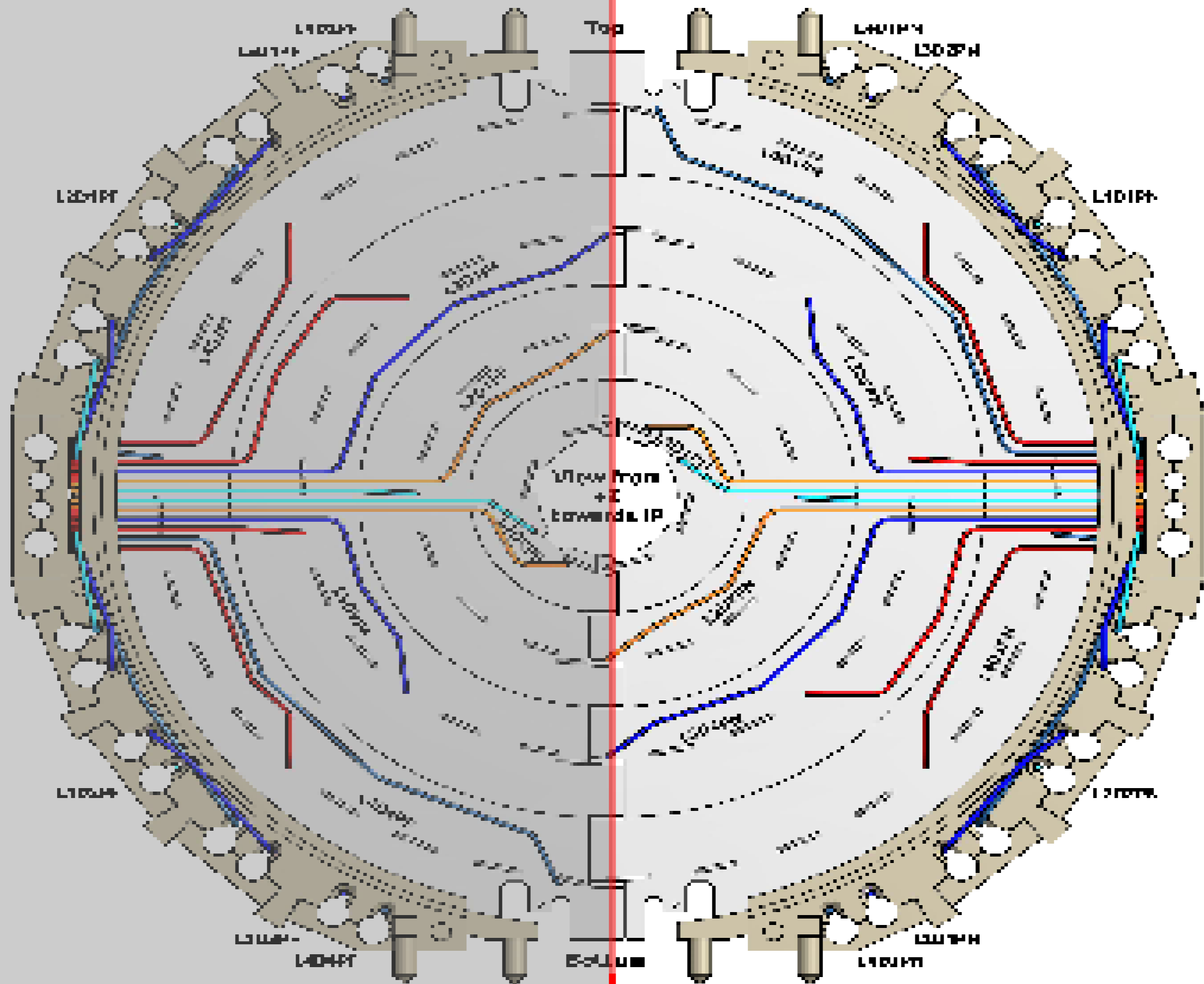
View from +Z end toward IP

1	L4-D2-PF
2	L3-D1-PF
3	L2-D1-PF

1	L4-D1-PN
2	L3-D2-PN
3	L1-D1-PN

4	L1-D2-PF
5	L3-D3-PF
6	L4-D4-PF

4	L2-D2-PN
5	L3-D4-PN
6	L4-D3-PN



BpO

BpI

CO2 Cooling Layout

BmI

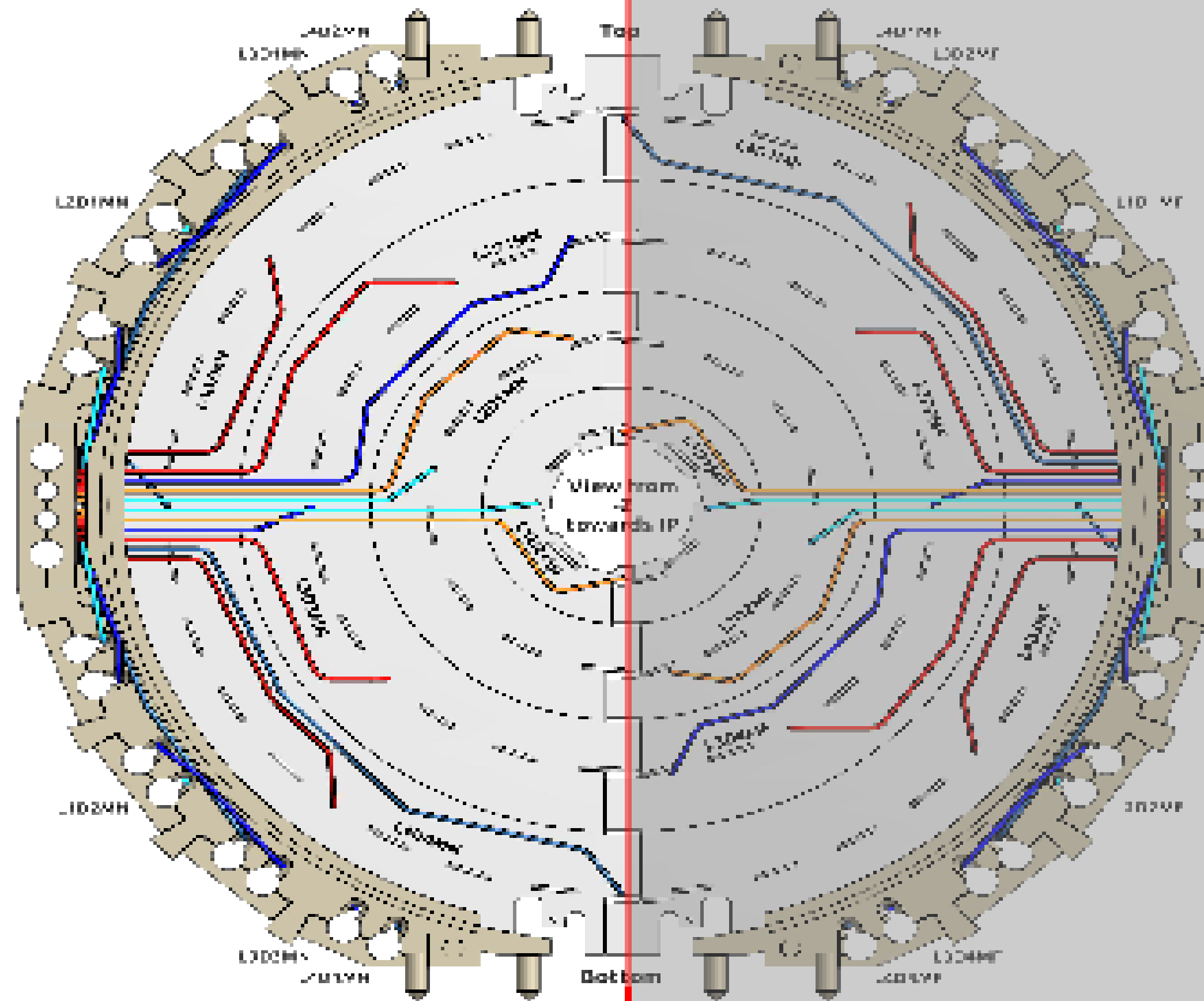
BmO

1	L4-D2-MN
2	L3-D1-MN
3	L2-D1-MN

1	L4-D1-MF
2	L3-D2-MF
3	L1-D1-MF

4	L1-D2-MN
5	L3-D3-MN
6	L4-D4-MN

4	L2-D2-MF
5	L3-D4-MF
6	L4-D3-MF



BmI

BmO