TM OSEMs

4 Feedthroughs

TM OSEM to BF Cable
JGW-D1503901 Sheet 01

OSEM		Type 5-2.2	BF to F0 Signal Cable JGW-D1503901 Sheet 08	PI-Flange Signal Cable JGW_D1503901 Sheet 11	Feedthrough	Anti-Feedthrough Adapter Cable	OSEM External Cable	Sat Amp #0 D1402809
			Type 3-4	Type 1				
BS-TM-H1	Glenair GMR7590-9P-1BPN	Glenair MWDM2L-9SS						
	BS-TM-H1	C-BS-TM-H1-0A / C-BS-TM-H1-0B	C-BS-TM-H1-1A / C-BS-TM-H1-1B	C-BS-TM-H1-2A / C-BS-TM-H1-2B	F-BS-TM-H1-A / F-BS-TM-H1-B	C-BS-TM-H1-3A / C-BS-TM-H1-3B	C-BS-TM-H1-4A / C-BS-TM-H1-4B	J101
	LEDK TMH1 LEDA TMH1 COIL- TMH1 COIL+ TMH1 PDA TMH1 PDK TMH1	DMicroM / DMicroF / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9F	D-Sub 9M / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F
BS-TM-H2		Type 5-2.4						
	BS-TM-H2	C-BS-TM-H2-0A / C-BS-TM-H2-0B	C-BS-TM-H2-1A / C-BS-TM-H2-1B	C-BS-TM-H2-2A / C-BS-TM-H2-2B	F-BS-TM-H2-A / F-BS-TM-H2-B	C-BS-TM-H2-3A / C-BS-TM-H2-3B	C-BS-TM-H2-4A / C-BS-TM-H2-4B	J102
	LEDK TMH2 LEDA TMH2 COIL- TMH2 COIL+ TMH2 PDA TMH2 PDK TMH2	DMicroM / DMicroF / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9F	D-Sub 9M / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F
BS-TM-H3		Type 5-2.4						
	BS-TM-H3	C-BS-TM-H3-0A / C-BS-TM-H3-0B	C-BS-TM-H3-1A / C-BS-TM-H3-1B	C-BS-TM-H3-2A / C-BS-TM-H3-2B	F-BS-TM-H3-A / F-BS-TM-H3-B	C-BS-TM-H3-3A / C-BS-TM-H3-3B	C-BS-TM-H3-4A / C-BS-TM-H3-4B	J103
	LEDK TMH3 LEDA TMH3 COIL- TMH3 COIL+ TMH3 PDA TMH3 PDK TMH3	DMicroM / DMicroF / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9F	D-Sub 9M / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F
BS-TM-H4		Type 5-2.2						
	BS-TM-H4	C-BS-TM-H4-0A / C-BS-TM-H4-0B	C-BS-TM-H4-1A / C-BS-TM-H4-1B	C-BS-TM-H4-2A / C-BS-TM-H4-2B	F-BS-TM-H4-A / F-BS-TM-H4-B	C-BS-TM-H4-3A / C-BS-TM-H4-3B	C-BS-TM-H4-4A / C-BS-TM-H4-4B	J104
	LEDK TMH4 LEDA TMH4 COIL- TMH4 COIL+ TMH4 PDA TMH4 PDK TMH4	DMicroM / DMicroF / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9F	D-Sub 9M / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F

Type 5 cables have a flip to correct flexicircuit issue.

Each OSEM has a D-Micro male, which looks superficially like a female but has pins in recesses. The OSEM and cable were both shown with the wrong gender until -v13 of this diagram.

The BS Test Hang used full OSEMs with PDs and LEDs at the TM level, but the Final Hang uses coil-only OSEMs.

Resistances/voltages at male end of Type 5 OSEM cable:

1/6: PD, 0.466 V

2/7: Coil, 14.5-15.1 Ω

3/8: LED, 0.975 V

Title	BS Suspension Cabling - TM OSEMs	
Size A3	Number JGW-D1503600	Revision -v15
Date: 2018/06/14		Sheet 1of 18
File: \\..\01 TM OSEMs.SchDoc		Drawn By:

6 Feedthroughs

IM OSEMs

OSEM	IM OSEM to BF Cable JGW-D1503901 Sheet 02	BF to F0 Signal Cable JGW-D1503901 Sheet 08	PI-Flange Signal Cable JGW_D1503901 Sheet 11	Feedthrough	Anti-Feedthrough Adapter Cable	OSEM External Cable	Sat Amp #1 D1402809
Glenair GMR7590-9P-1BPN	Glenair MWDM2L-9SS	Type 5-1.7	Type 3-4	Type 1-2			
BS-IM-V1	C-BS-IM-V1-0A / C-BS-IM-V1-0B	C-BS-IM-V1-1A / C-BS-IM-V1-1B	C-BS-IM-V1-2A / C-BS-IM-V1-2B	F-BS-IM-V1-A / F-BS-IM-V1-B	C-BS-IM-V1-3A / C-BS-IM-V1-3B	C-BS-IM-V1-4A / C-BS-IM-V1-4B	J-BS-SA2-101
BS-IM-V2	C-BS-IM-V2-0A / C-BS-IM-V2-0B	C-BS-IM-V2-1A / C-BS-IM-V2-1B	C-BS-IM-V2-2A / C-BS-IM-V2-2B	F-BS-IM-V2-A / F-BS-IM-V2-B	C-BS-IM-V2-3A / C-BS-IM-V2-3B	C-BS-IM-V2-4A / C-BS-IM-V2-4B	J-BS-SA2-102
BS-IM-V3	C-BS-IM-V3-0A / C-BS-IM-V3-0B	C-BS-IM-V3-1A / C-BS-IM-V3-1B	C-BS-IM-V3-2A / C-BS-IM-V3-2B	F-BS-IM-V3-A / F-BS-IM-V3-B	C-BS-IM-V3-3A / C-BS-IM-V3-3B	C-BS-IM-V3-4A / C-BS-IM-V3-4B	J-BS-SA2-103
LEDK BS-IM-V3 LEDA BS-IM-V3 COIL- BS-IM-V3 COIL+ BS-IM-V3 PDA BS-IM-V3 PDK BS-IM-V3	DMicroF / DMicroM / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9F	D-Sub 9M / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F

Sat Amp #2 D1402809

	Type 5-1.7	Type 3-4	Type 1-2				
BS-IM-H1	C-BS-IM-H1-0A / C-BS-IM-H1-0B	C-BS-IM-H1-1A / C-BS-IM-H1-1B	C-BS-IM-H1-2A / C-BS-IM-H1-2B	F-BS-IM-H1-A / F-BS-IM-H1-B	C-BS-IM-H1-3A / C-BS-IM-H1-3B	C-BS-IM-H1-4A / C-BS-IM-H1-4B	J-BS-SA3-101
BS-IM-H2	C-BS-IM-H2-0A / C-BS-IM-H2-0B	C-BS-IM-H2-1A / C-BS-IM-H2-1B	C-BS-IM-H2-2A / C-BS-IM-H2-2B	F-BS-IM-H2-A / F-BS-IM-H2-B	C-BS-IM-H2-3A / C-BS-IM-H2-3B	C-BS-IM-H2-4A / C-BS-IM-H2-4B	J-BS-SA3-102
BS-IM-H3	C-BS-IM-H3-0A / C-BS-IM-H3-0B	C-BS-IM-H3-1A / C-BS-IM-H3-1B	C-BS-IM-H3-2A / C-BS-IM-H3-2B	F-BS-IM-H3-A / F-BS-IM-H3-B	C-BS-IM-H3-3A / C-BS-IM-H3-3B	C-BS-IM-H3-4A / C-BS-IM-H3-4B	J-BS-SA3-103
LEDK BS-IM-H3 LEDA BS-IM-H3 COIL- BS-IM-H3 COIL+ BS-IM-H3 PDA BS-IM-H3 PDK BS-IM-H3	DMicroF / DMicroM / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9F	D-Sub 9M / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F / D-Sub 9M	D-Sub 9F

Type 5 cables have a flip to correct flexicircuit issue.

Each OSEM has a D-Micro male, which looks superficially like a female but has pins in recesses. The OSEM and cable were both shown with the wrong gender until -v13 of this diagram

Resistances/voltages at male end of Type 5 OSEM cable:

1/6: PD, 0.466 V

2/7: Coil, 14.5-15.1 Ω

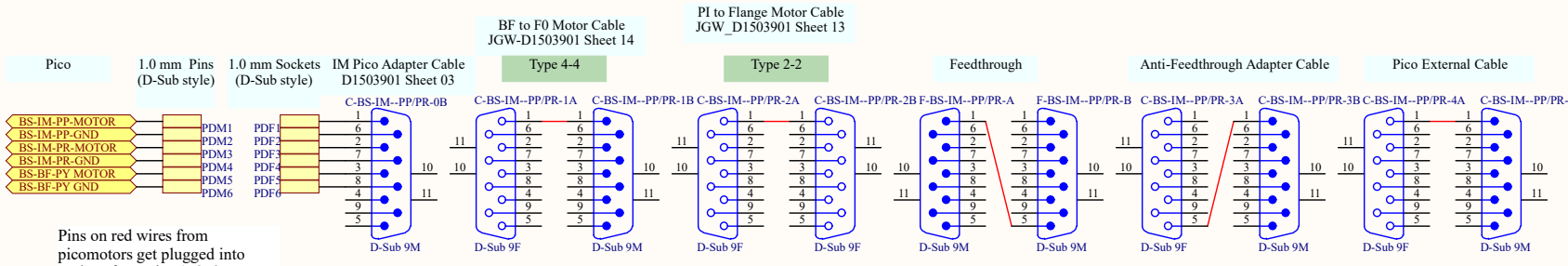
3/8: LED, 0.975 V

J-BS-SA3-103 and J-BS-SA3-104 not used

Title: BS Suspension Cabling - IM OSEMs		
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14		Sheet 2 of 18
File: \\..\02 IM OSEMs.SchDoc		Drawn By:

1 Feedthrough

IM Picomotors & BF Yaw Picomotor



Pins on red wires from picomotors get plugged into sockets from pins 1, 2, 3.

Pins on white wires from picomotors get plugged into sockets from pins 6, 7, 8.

The pico motor at the bottom level of the IM does pitch and gets plugged into 1&6.

The pico motor at the top level of the IM does roll and gets plugged into 2&7.

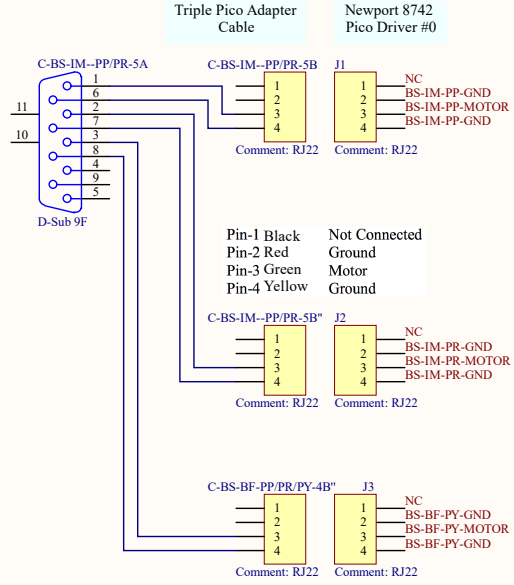
The pico motor in the BS does IM yaw and gets plugged into 3&8.

The connectors for the pico drivers are RJ22 with four pins.
I couldn't find Altium versions, so I used a random four-pin connector.

The adapter cable is made by combining the cables supplied by the pico manufacturer (Newport) with a D-Sub 9 female.

Green wires from manufacturer's cables get soldered to pins 1, 2.

Yellow wires from manufacturer's cables get soldered to pins 6, 7.



In -v10, the BS Yaw Pico was moved to the IM sheet and grouped with the IM picos, because it's more physically convenient for wiring and more logical (it actually rotates the IM).

Title: BS Suspension Cabling - IM Picos and BF Yaw Pico		
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14	Sheet 3of 18	
File: \\..\03 IM Picos & BF Yaw Pico.SchDoc	Drawn By:	

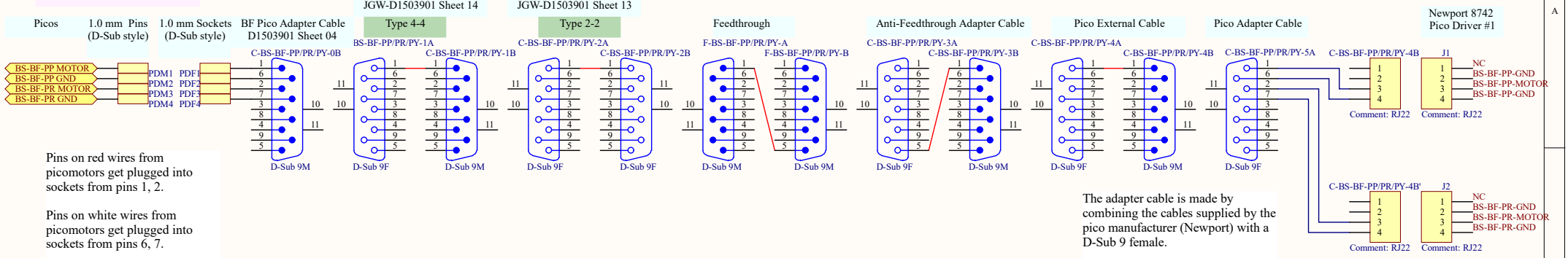
3 Feedthroughs

In -v10, the BS Yaw Pico was moved to the IM sheet and grouped with the IM picos, because it's more physically convenient for wiring and more logical (it actually rotates the IM).

BF and F1
Picomotors and Steppers

The connectors for the pico drivers are RJ22 with four pins.
I couldn't find Altium versions, so I used a random four-pin connector.

Pin-1 Black	Not Connected
Pin-2 Red	Ground
Pin-3 Green	Motor
Pin-4 Yellow	Ground



Pins on red wires from picomotors get plugged into sockets from pins 1, 2.

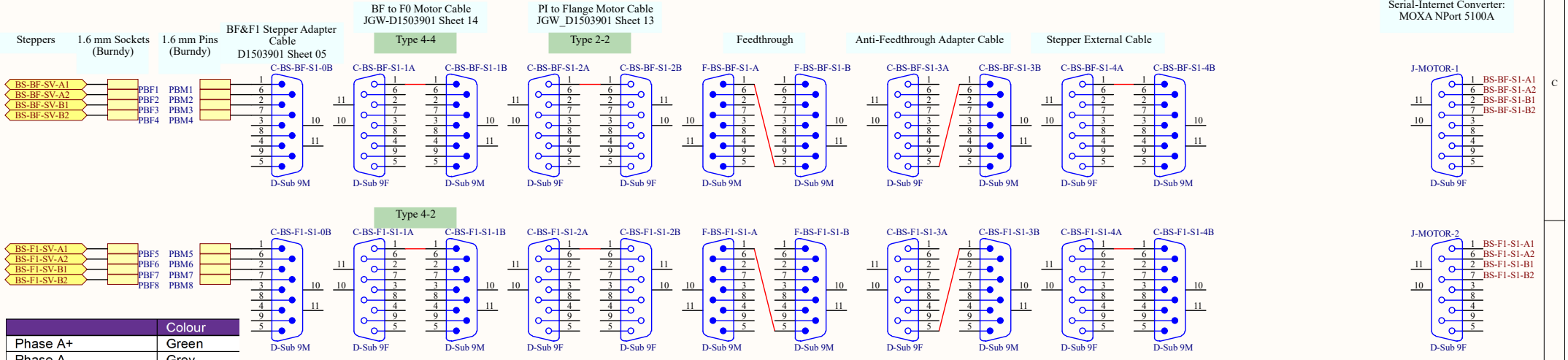
Pins on white wires from picomotors get plugged into sockets from pins 6, 7.

The adapter cable is made by combining the cables supplied by the pico manufacturer (Newport) with a D-Sub 9 female.

Green wires from manufacturer's cables get soldered to pins 1, 2, 3.

Yellow wires from manufacturer's cables get soldered to pins 6, 7, 8.

Stepper Driver #0
Chassis: JGW-D1605365
Board: TMCM-6110
Serial-Internet Converter: MOXA NPort 5100A



	Colour
Phase A+	Green
Phase A-	Grey
Phase B+	Black
Phase B–	White
Thermocouple +	Brown
Thermocouple -	Blue

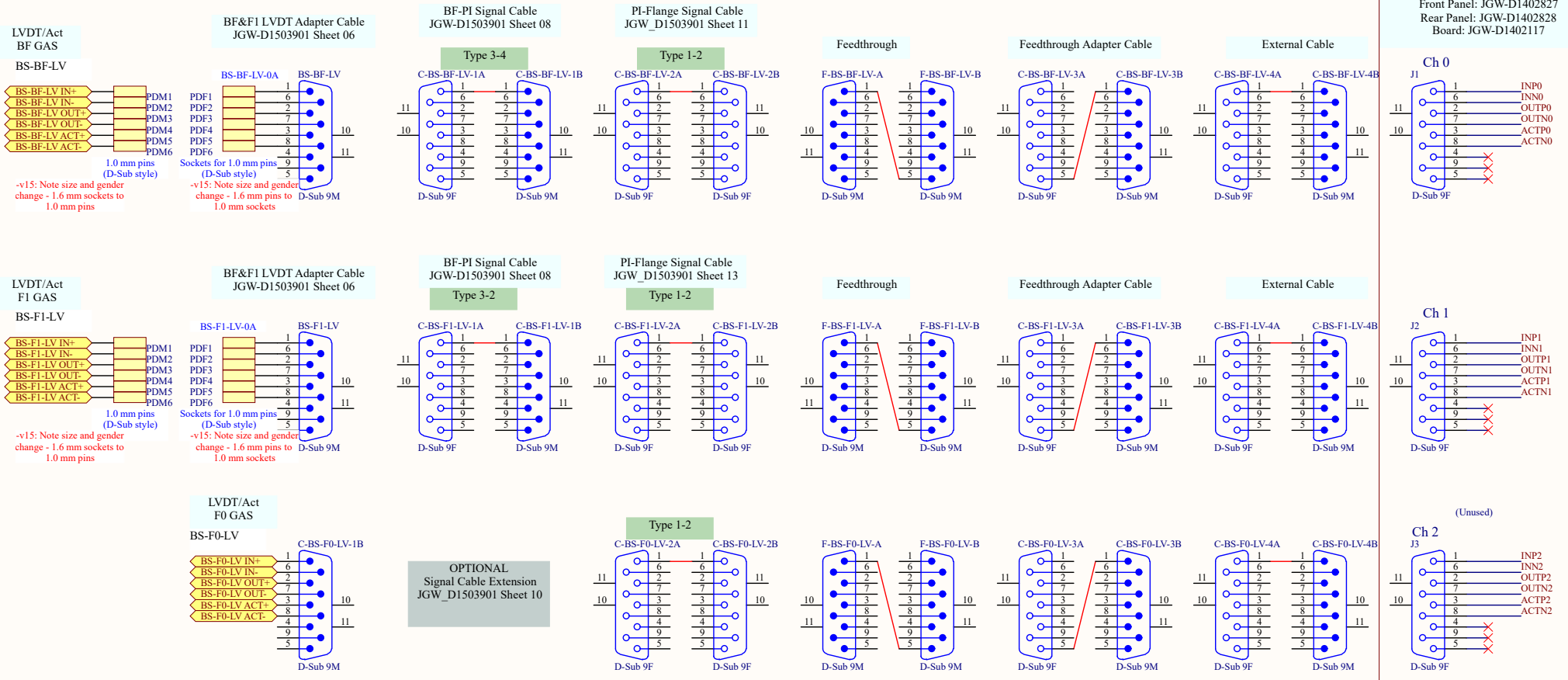
Coil resistances (including one "Type 3" cable):

SV: 5.5 Ω

Title	BS Suspension Cabling - Bottom and Standard Filter Picos/Steppers	
Size A3	Number JGW-D1503600	Revision -v15
Date: 2018/06/14		Sheet 4of 18
File: \\..\04 BF&F1 Picos&Steppers.SchDoc		Drawn By:

GAS (BF, F1 and F0) LVDT/ACTs

2 Feedthroughs



"IN" = 1/6 = Primary = Single Coil = AWG36, 187Ω, 38 mH

"OUT" = 2/7 = Secondary = Double Coil = AWG32, 78Ω, 9.5 mH

"ACT" = 3/8 = Force Coil = AWG32, 110Ω, 74 mH

Title: BS Suspension Cabling - GAS LVDTs		
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14		Sheet 5of 18
File: \\..\05 GAS LVDTs.SchDoc		Drawn By:

IP LVDTs

4 Feedthroughs

LVDT/ACT Distributor - see also Sheet 13
Chassis: JGW-D1402124
Front Panel: JGW-D1402827
Rear Panel: JGW-D1402828
Board: JGW-D1402117

LVDT/ACT

OPTIONAL
Signal Cable Extension
JGW_D1503901 Sheet 10

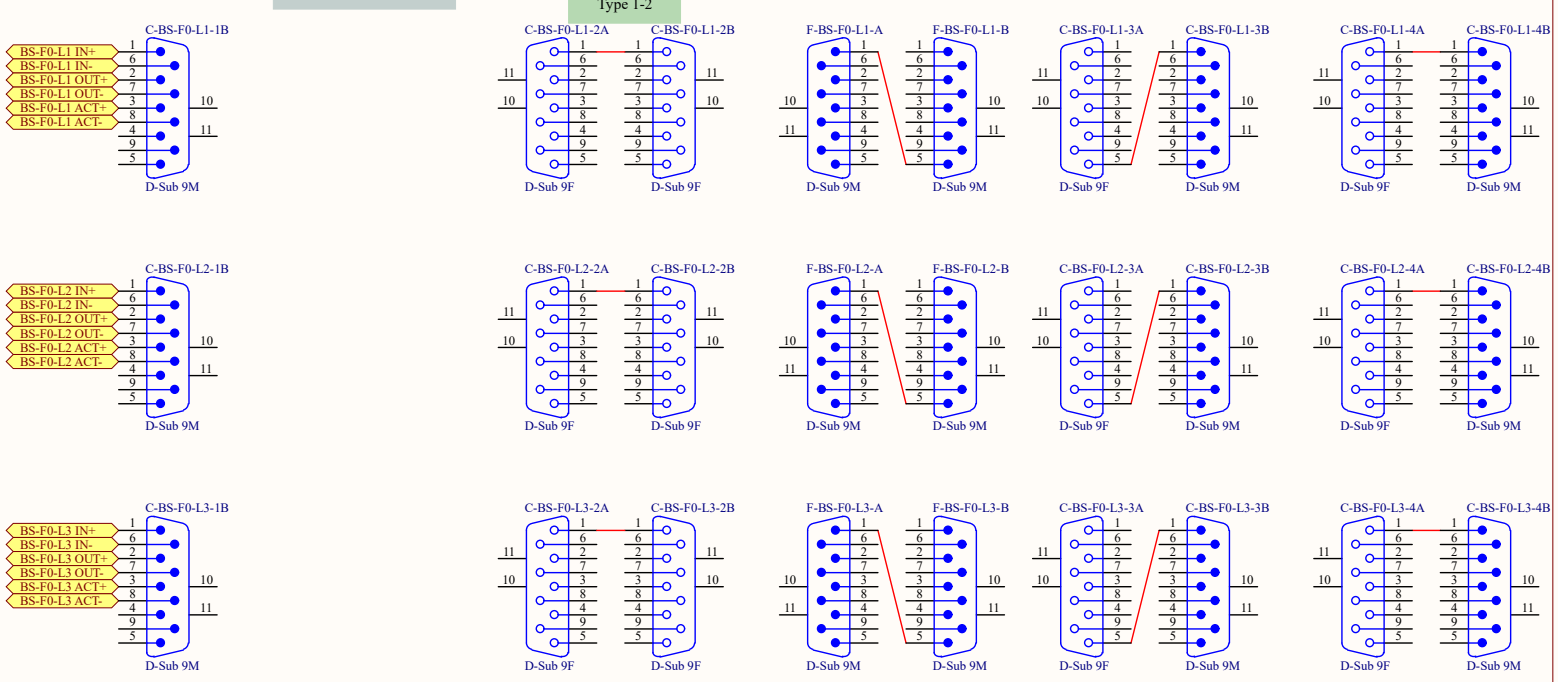
PI-Flange Signal Cable
JGW_D1503901 Sheet 11

Type 1-2

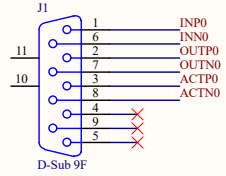
Feedthrough

Anti-Feedthrough Adapter Cable

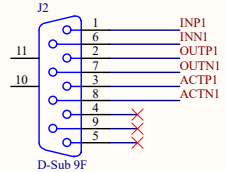
LVDT/ACT External Cable



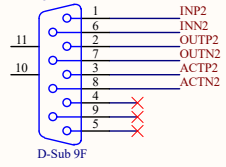
Ch 4



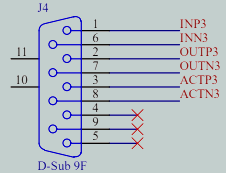
Ch 5



Ch 6



Ch 7



LVDT-COIL

Pin	Function
1	LVDT IN P
2	LVDT OUT P
3	COIL P
4	
5	
6	LVDT IN N
7	LVDT OUT N
8	COIL N
9	

Coil resistances:

"IN" = 1/6 = Primary = Single Coil = 250 Ω

"OUT" =2/7 = Secondary = Double Coil = 320 Ω

"ACT" = 3/8 = Force Coil = 155 Ω

BS Currently has Primaries and Secondaries swapped, 2017-05-30

Title: BS Suspension Cabling - IP LVDTs		
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14		Sheet 6of 18
File: \\..\06 IP LVDTs.SchDoc		Drawn By:

4 Feedthroughs

The vertical and yaw steppers have no limit switches and are combined on a single cable that VIS needs to provide.

Preisolator Steppers

TMCM-6110
Stepper Driver #2

Stepper Splitter Cable
Double Motor Version

Stepper Driver #1
Chassis: JGW-D1605365
Board: TMCM-6110
Serial-Internet Converter:
MOXA NPort 5100A

Stepper

F0 Stepper Adapter
JGW-D1503901 Sheet 24

The horizontal steppers have limit switches and will be wired as indicated by the IP manufacturer.

PI to Flange Motor Cable
JGW-D1503901 Sheet 13

Type 2-2

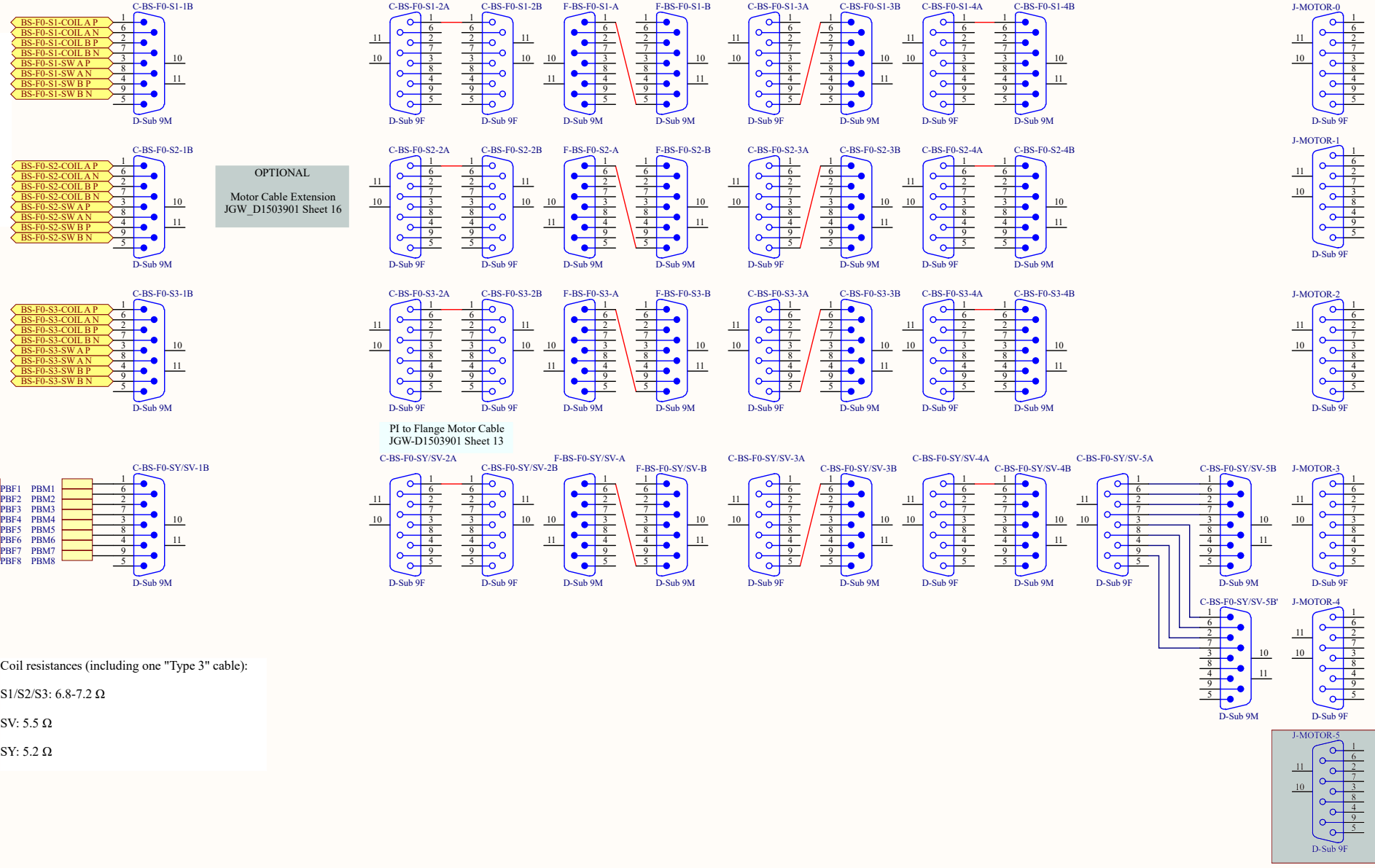
Feedthrough

Anti-Feedthrough Adapter Cable

Stepper External Cable

Stepper motor

Pin	Function
1	COIL A P
2	COIL B P
3	Switch 1 P
4	Switch 2 P
5	
6	COIL A N
7	COIL B N
8	Switch 1 N
9	Switch 2 N



Coil resistances (including one "Type 3" cable):

S1/S2/S3: 6.8-7.2 Ω

SV: 5.5 Ω

SY: 5.2 Ω

Title: BS Suspension Cabling - Preisolator Steppers		
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14		Sheet 7of 18
File: \\..\07 PI Steppers.SchDoc		Drawn By:

3 Feedthroughs

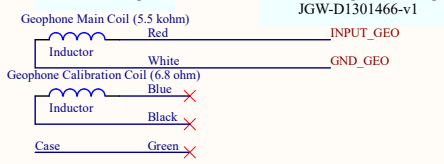
Preisolator Geophones

Geophone Pod Internal Cabling
(same for all three pods):

Pod #1: geophone L400002322, preamp 15
Pod #2: geophone L400002321, preamp 12
Pod #3: geophone L400002323, preamp 14

Sercel L4C Geophone

Nikhef Geophone Preamp
JGW-D1301466-v1



Geophone Pod

Geophone Adapter Cable
JGW-D1503901 Sheet 07

PI to Flange Geophone Cable
JGW-E1503901 Sheet 11
Type 1-2

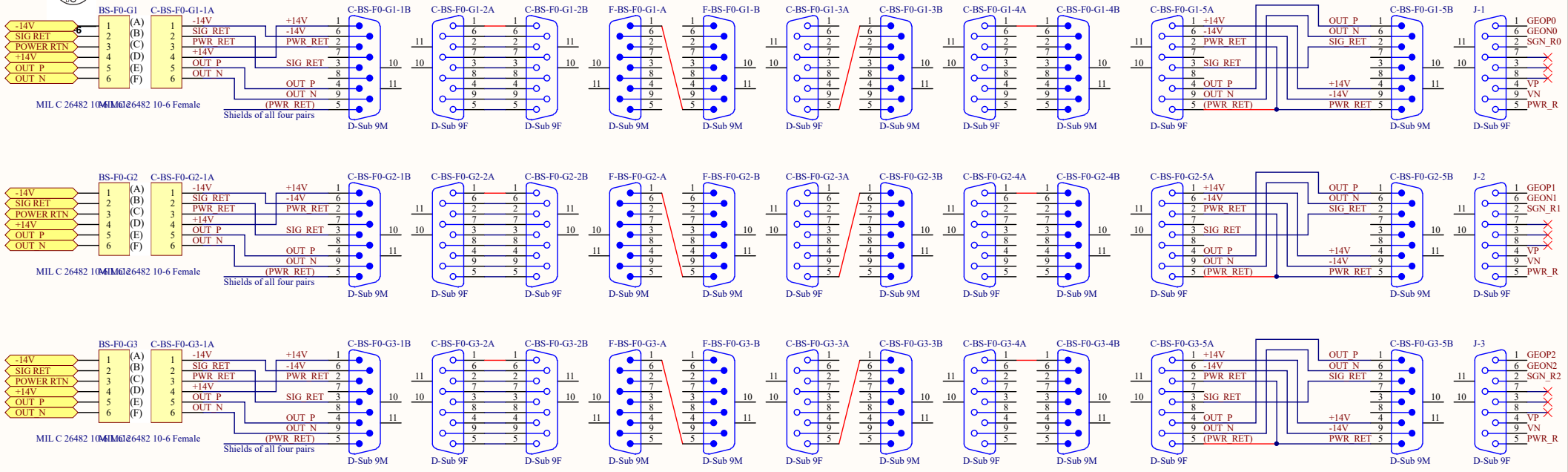
Feedthrough

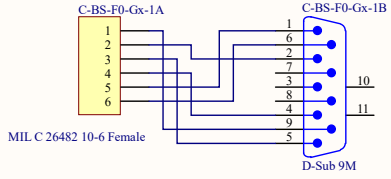
Anti-Feedthrough Adapter Cable

Geophone External Cable

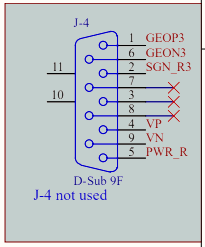
Geophone Unscrambler Cable

Geophone Distributor
JGW-D1402120





Old-style geophone adapter as used in Type B Test Hang at TAMA300. These should _not_ be used with Geophone Unscrambler Cables.



J-4 not used

Title	BS Suspension Cabling - Preisolator Geophones	
Size A3	Number JGW-D1503600	Revision -v15
Date: 2018/06/14		Sheet 8of 18
File: \\..\08 PI Geophones.SchDoc		Drawn By:

TM OSEM Sat Amp and Coil Driver

The original design calls for low power coil drivers for the TM and IM OSEMs, but, at least for commissioning, these have been replaced by high power ones.

Sat Amp #0

Chassis: JGW-D1503498,
Front Panel: JGW-D1503500,
Rear Panel: JGW-D1503500,
Board: JGW-D1503499

Inputs from TM OSEMs (see Sheet 1)

J101 J103 J102 J104 — D-Sub 9F

Coil Drive Inputs — J501 — DB15M

PD Outputs — J502 — DB9F

LED Current Monitor Outputs — J503 — DB9F

AI Chassis #0 D1100650

AI Out 0-3 — J1 — D Connector 9

Generic D-Sub 9 Cable M-F

D-Sub 9M — D-Sub 9F

Generic D-Sub 15 Cable M-F

DB15F — DB15M

Generic D-Sub 9 Cable M-F

D-Sub 9M — D-Sub 9F

AA Chassis #0 D1100621

AA In 1-4 — J4 — D-Sub 9M

Generic D-Sub 9 Cable M-F

D-Sub 9M — D-Sub 9F

AA Chassis #1 D1100621

AA In TBD — TBD3 — D-Sub 9M

TBD2 — D-Sub 9M

TBD3 — D-Sub 9M

Generic D-Sub 9 Cable M-F

D-Sub 9F — D-Sub 9M

AA In TBD

TBD1 — D-Sub 9M

AA In TBD

AA Chassis #1 D1100621

Low Power Coil Driver #0

Coil Current Request Inputs — J3 — D-Sub 9M

Coil Drive Ouputs — J4 — DB15F

J2 — D-Sub 9F

Noise Monitor Input

Voltage Monitor Outputs — J3 — D-Sub 9M

Fast Current Monitor Outputs — J4 — D-Sub 9M

J5 — D-Sub 9M

Slow Current Monitor Outputs

Binary IO 2 DIO Input — J7

LP11, Reset Pulse, LP21, LP31, Test1, LP12, LP22, LP32, Test2, LP13, LP23, LP33, Test3, LP14, LP24, LP34, Test4, VRla/+15, VRla/+15, 0V

37 Pin D-Sub MALE

Binary IO 1 DIO Ouput — J6

LP1ON1, Channel 1 not tripped, LP2ON1, Channel 2 not tripped, LP3ON1, Channel 3 not tripped, TestMode1, Channel 4 not tripped, LP1ON2, LP2ON2, LP3ON2, TestMode2, LP1ON3, LP2ON3, LP3ON3, TestMode3, LP1ON4, LP2ON4, LP3ON4, TestMode4, VRla/+15, VRla/+15, 0V

37 Pin D-Sub FEMALE

Chassis: JGW-D1503506,
Front Panel: JGW-D1503508,
Main Board: JGW-D1503507
BIO Board: JGW-D1504332

Cable F-M and Gender Bender F-F 37 pin

?? — ?? — Tyco 1-1634587-2 Tyco 1-1634587-2

CNB/CNA (Output 1) — Tyco 1-1634583-2

Cable M-F 37 pin

J? — J? — Tyco 1-1634583-2 Tyco 1-1634583-2

CNA/ CNA (Input 1) — Tyco 1-1634583-2

DIO Card #0

Contec DIO-6464L-PE

CNB — CNA

PCB100WS Cable — PCB100WS Cable

CNB/CNB (Output 2)

CNA/CNB (Input 2)

Title: BS Suspension Cabling - TM OSEM Sat Amp & Coil Driver		
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14	Sheet 9of 18	
File: \\..\09 TM Sat Amp & Coil Driver.SchDoc	Drawn By:	

IM Vertical OSEM Sat Amp and Coil Driver

The original design calls for low power coil drivers for the TM and IM OSEMs, but, at least for commissioning, these have been replaced by high power ones.

Sat Amp #1

Chassis: JGW-D1503498,
Front Panel: JGW-D1503500,
Rear Panel: JGW-D1503500,
Board: JGW-D1503499

Inputs from IM OSEMs V1, V2, V3 (see Sheet 2)

J101, J103, J102, J104 — D-Sub 9F

Coil Drive Inputs — J501 — DB15M

PD Outputs — J502 — DB9F

LED Current Monitor Outputs — J503 — DB9F

AI Chassis #0 D1100650

AI Out 4-7 — J1 — D Connector 9

Generic D-Sub 9 Cable M-F

D-Sub 9M — D-Sub 9F

Generic D-Sub 15 Cable M-F

DB15F — DB15M

AA Chassis #0 D1100621

AA In 1-4 — J4 — D-Sub 9M

AA Chassis #1 D1100621

AA In TBD — TBD3, TBD2, TBD3 — D-Sub 9M

AA In TBD — TBD1 — D-Sub 9M

AA Chassis #1 D1100621

Generic D-Sub 9 Cable M-F

D-Sub 9F — D-Sub 9M

Low Power Coil Driver #1

Coil Current Request Inputs — J3 — D-Sub 9M

Coil Drive Ouputs — J4 — DB15F

J2 — D-Sub 9F

Noise Monitor Input

Voltage Monitor Outputs — J3 — D-Sub 9M

Fast Current Monitor Outputs — J4 — D-Sub 9M

J5 — D-Sub 9M

Slow Current Monitor Outputs

Binary IO 2 DIO Input — J7

	1	20	
LP11	2	21	38
Reset Pulse	3	22	39
LP21	4	23	
LP31	5	24	
Test1	6	25	
LP12	7	26	
LP22	8	27	
LP32	9	28	
Test2	10	29	
LP13	11	30	
LP23	12	31	
LP33	13	32	
Test3	14	33	
LP14	15	34	
LP24	16	35	
LP34	17	36	
Test4	18	37	
VRla/+15	19		
VRla/+15	0V		

37 Pin D-Sub MALE

Binary IO 1 DIO Ouput — J6

	1	20	
LP1ON1	2	21	38
Channel 1 not tripped	3	22	39
LP2ON1	4	23	
Channel 2 not tripped	5	24	
LP3ON1	6	25	
Channel 3 not tripped	7	26	
TestMode1	8	27	
Channel 4 not tripped	9	28	
LP1ON2	10	29	
LP2ON2	11	30	
LP3ON2	12	31	
TestMode2	13	32	
LP1ON3	14	33	
LP2ON3	15	34	
LP3ON3	16	35	
TestMode3	17	36	
LP1ON4	18	37	
LP2ON4	19		
LP3ON4	0V		
TestMode4			
VRla/+15			
VRla/+15			

37 Pin D-Sub FEMALE

Chassis: JGW-D1503506,
Front Panel: JGW-D1503508,
Main Board: JGW-D1503507
BIO Board: JGW-D1504332

Cable F-M and Gender Bender F-F 37 pin

?? — ?? — Tyco 1-1634587-2 Tyco 1-1634587-2

Cable M-F 37 pin

J? — J? — Tyco 1-1634583-2 Tyco 1-1634583-2

CNB/CNA (Output 1)

1	N-8/9	
20	N-A/B	
2	O-80	
21	O-A0	
3	O-81	
22	O-A1	
4	O-82	
23	O-A2	
5	O-83	
24	O-A3	
6	O-84	
25	O-A4	
7	O-85	
26	O-A5	
8	O-86	
27	O-A6	
9	O-87	
28	O-A7	
10	O-90	
29	O-B0	
11	O-91	
30	O-B1	
12	O-92	
31	O-B2	
13	O-93	
32	O-B3	
14	O-94	
33	O-B4	
15	O-95	
34	O-B5	
16	O-96	
35	O-B6	
17	O-97	
36	O-B7	
18	P-8/9	
37	P-A/B	
19	NC	

Tyco 1-1634583-2

DIO Card #1

Contec DIO-6464L-PE

CNB — CNA

PCB100WS Cable — PCB100WS Cable

CNB/CNB (Output 2) — See Sheet 11.

CNA/ CNA (Input 1)

1	NC	
20	NC	
2	I-00	
21	I-20	
3	I-01	
22	I-21	
4	I-02	
23	I-22	
5	I-03	
24	I-23	
6	I-04	
25	I-24	
7	I-05	
26	I-25	
8	I-06	
27	I-26	
9	I-07	
28	I-27	
10	I-10	
29	I-30	
11	I-11	
30	I-31	
12	I-12	
31	I-32	
13	I-13	
32	I-33	
14	I-14	
33	I-34	
15	I-15	
34	I-35	
16	I-16	
35	I-36	
17	I-17	
36	I-37	
18	P-0/1	
37	P-2/3	
19	NC	

Tyco 1-1634583-2

CNA/CNB (Input 2) — See Sheet 11.

Title	BS Suspension Cabling - IM-V OSEM Sat Amp & Coil Driver
Size	A3
Number	JGW-D1503600
Revision	-v15
Date:	2018/06/14
Sheet	10 of 18
File:	\\..\10 IM-V Sat Amp & Coil Driver.SchDoc
Drawn By:	

IM Horizontal OSEM Sat Amp and Coil Driver

The original design calls for low power coil drivers for the TM and IM OSEMs, but, at least for commissioning, these have been replaced by high power ones.

Sat Amp #2

Chassis: JGW-D1503498,
Front Panel: JGW-D1503500,
Rear Panel: JGW-D1503500,
Board: JGW-D1503499

Inputs from IM OSEMs
H1, H2, H3
(see Sheet 2)

J101 J103 J102 J104 — D-Sub 9F

J501 — DB15M — Coil Drive Inputs

J502 — DB9F — PD Outputs

J503 — DB9F — LED Current Monitor Outputs

AI Chassis #0 D1100650

AI Out 8-11
J1 — D Connector 9

Generic D-Sub 9 Cable M-F
D-Sub 9M — D-Sub 9F

Generic D-Sub 15 Cable M-F
DB15F — DB15M

AA Chassis #0 D1100621

AA In 1-4
J4 — D-Sub 9M

Generic D-Sub 9 Cable M-F
D-Sub 9M — D-Sub 9F

AA Chassis #1 D1100621

AA In TBD
TBD3 — D-Sub 9M
TBD2 — D-Sub 9M
TBD3 — D-Sub 9M

Generic D-Sub 9 Cable M-F
D-Sub 9F — D-Sub 9M

AA Chassis #1 D1100621

AA In TBD
TBD1 — D-Sub 9M

Generic D-Sub 9 Cable M-F
D-Sub 9M — D-Sub 9F

Low Power Coil Driver #2

Coil Current Request Inputs
J3 — D-Sub 9M

Coil Drive Ouputs
J4 — DB15F

J2 — D-Sub 9F — Noise Monitor Input

Voltage Monitor Outputs
J3 — D-Sub 9M

Fast Current Monitor Outputs
J4 — D-Sub 9M

J5 — D-Sub 9M — Slow Current Monitor Outputs

Binary IO 2 DIO Input
J7

	1	20	
LP11	2	21	
Reset Pulse	3	22	
LP21	4	23	
LP31	5	24	
Test1	6	25	
LP12	7	26	
LP22	8	27	
LP32	9	28	
Test2	10	29	
LP13	11	30	
LP23	12	31	
LP33	13	32	
Test3	14	33	
LP14	15	34	
LP24	16	35	
LP34	17	36	
Test4	18	37	
VRla/+15	19		
VRla/+15	0V		

37 Pin D-Sub MALE

Binary IO 1 DIO Ouput
J6

	1	20	
LP1ON1	2	21	
Channel 1 not tripped	3	22	
LP2ON1	4	23	
Channel 2 not tripped	5	24	
LP3ON1	6	25	
Channel 3 not tripped	7	26	
TestMode1	8	27	
Channel 4 not tripped	9	28	
LP1ON2	10	29	
LP2ON2	11	30	
LP3ON2	12	31	
TestMode2	13	32	
LP1ON3	14	33	
LP2ON3	15	34	
LP3ON3	16	35	
TestMode3	17	36	
LP1ON4	18	37	
LP2ON4	19		
LP3ON4	0V		
TestMode4			
VRla/+15			
VRla/+15			

37 Pin D-Sub FEMALE

Chassis: JGW-D1503506,
Front Panel: JGW-D1503508,
Main Board: JGW-D1503507
BIO Board: JGW-D1504332

Cable F-M and Gender Bender F-F 37 pin
?? — Tyco 1-1634587-2 — Tyco 1-1634587-2

CNB/CNB (Output 2)
Tyco 1-1634583-2

	1	20	N-8/9
	2	21	N-A/B
	3	22	O-80
	4	23	O-A0
	5	24	O-81
	6	25	O-A1
	7	26	O-82
	8	27	O-A2
	9	28	O-83
	10	29	O-A3
	11	30	O-84
	12	31	O-A4
	13	32	O-85
	14	33	O-A5
	15	34	O-86
	16	35	O-A6
	17	36	O-87
	18	37	O-A7
	19		O-90
			O-B0
			O-91
			O-B1
			O-92
			O-B2
			O-93
			O-B3
			O-94
			O-B4
			O-95
			O-B5
			O-96
			O-B6
			O-97
			O-B7
			P-8/9
			P-A/B
			NC

DIO Card #1

Contec DIO-6464L-PE
See also Sheet 10.

See Sheet 10.
CNB/CNA (Output 1)
CNB See also Sheet 10. PCB100WS Cable
CNA See also Sheet 10. PCB100WS Cable
See Sheet 10.
CNA/ CNA (Input 1)

Cable M-F 37 pin
J? — Tyco 1-1634583-2 — Tyco 1-1634583-2

CNA/CNB (Input 2)
Tyco 1-1634583-2

	1	20	NC
	2	21	NC
	3	22	I-00
	4	23	I-20
	5	24	I-01
	6	25	I-21
	7	26	I-02
	8	27	I-22
	9	28	I-03
	10	29	I-23
	11	30	I-04
	12	31	I-24
	13	32	I-05
	14	33	I-25
	15	34	I-06
	16	35	I-26
	17	36	I-07
	18	37	I-27
	19		I-10
			I-30
			I-11
			I-31
			I-12
			I-32
			I-13
			I-33
			I-14
			I-34
			I-15
			I-35
			I-16
			I-36
			I-17
			I-37
			P-0/1
			P-2/3
			NC

Title	BS Suspension Cabling - IM-V OSEM Sat Amp & Coil Driver	
Size A3	Number JGW-D1503600	Revision -v15
Date: 2018/06/14	Sheet 11 of 18	
File: \\..\11 IM-H Sat Amp & Coil Driver.Schdoc	Drawn By:	

GAS LVDT Driver Readout

Inputs from GAS LVDTs (see Sheet 5)

LVDT/ACT Distributor - see also Sheet 13
Chassis: JGW-D1402124
Front Panel: JGW-D1402827
Rear Panel: JGW-D1402828
Board: JGW-D1402117

Ch 0
J1
D-Sub 9F
INP0, INN0, OUTP0, OUTN0, ACTP0, ACTN0

Ch 0-3 LVDT-IN
J5
INP0, INN0, INP1, INN1, INP2, INN2, INP3, INN3
6E17C009SAJ120

Generic D-Sub 9 Cable M-F
D-Sub 9M — D Connector 9

Ch 1
J2
D-Sub 9F
INP1, INN1, OUTP1, OUTN1, ACTP1, ACTN1

Ch 0-3 LVDT-OUT
J6
OUTP0, OUTN0, OUTP1, OUTN1, OUTP2, OUTN2, OUTP3, OUTN3
6E17C009SAJ120

Generic D-Sub 9 Cable M-F
D-Sub 9M — D Connector 9

Ch 2
J3
D-Sub 9F
INP2, INN2, OUTP2, OUTN2, ACTP2, ACTN2

Ch 3
J4
D-Sub 9F
INP3, INN3, OUTP3, OUTN3, ACTP3, ACTN3

Ch 0-3 ACT
J7
ACTP0, ACTN0, ACTP1, ACTN1, ACTP2, ACTN2, ACTP3, ACTN3
6E17C009SAJ120
1734348-1
5747844-4

See sheet 13.

LVDT Driver - see also Sheet 13
Chassis: JGW-D1402826,
Main Board: JGW-D1301467
Input Boards (2): JGW-D1301467
Front Panel: JGW-D1402827

LVDT CARD 1 (Left)
J1
D-Sub 9M
INP0, INN0, INP1, INN1, INP2, INN2, INP3, INN3

LVDT MAIN (Left)
J1
D-Sub 9M

LVDT CARD 1 (Right)
J2
D-Sub 9M
OUTP0, OUTN0, OUTP1, OUTN1, OUTP2, OUTN2, OUTP3, OUTN3

DIST-OUT4
LEMO I Pin

Cable

The LVDT Chassis has provision for an oscillator card, but until such time as the cards are available, an external oscillator will be required

J?
BNC

Signal Generator
10 kHz, 5 V

Gender Bender F-F
D Connector 9 — D Connector 9

Generic D-Sub 9 Cable M-F
D-Sub 9M — D Connector 9

AA Chassis #1
JGW-D1100621

AA In 12-15
J3
D-Sub 9M

Title	BS Suspension Cabling - GAS LVDT Driver Readout	
Size: A3	Number: JGW-D1503600	Revision: -v15
Date: 2018/06/14	Sheet 12 of 18	
File: \\..\12 GAS LVDT Drive Readout.SchDoc	Drawn By:	

GAS LVDT Driver Actuation/BIO

Inputs from GAS LVDTs (see Sheet 5)

LVDT/ACT Distributor - see also Sheet 13
Chassis: JGW-D1402124
Front Panel: JGW-D1402827
Rear Panel: JGW-D1402828
Board: JGW-D1402117

Ch 0
J1 — D-Sub 9F
INP0, INN0, OUTP0, OUTN0, ACTP0, ACTN0

Ch 0-3 LVDT-IN
J? — 6E17C009SAJ120
INP0, INN0, INP1, INN1, INP2, INN2, INP3, INN3

See sheet 12.

Ch 1
J2 — D-Sub 9F
INP1, INN1, OUTP1, OUTN1, ACTP1, ACTN1

Ch 0-3 LVDT-OUT
J? — 6E17C009SAJ120
OUTP0, OUTN0, OUTP1, OUTN1, OUTP2, OUTN2, OUTP3, OUTN3

See sheet 12.

Ch 2
J3 — D-Sub 9F
INP2, INN2, OUTP2, OUTN2, ACTP2, ACTN2

Ch 3
J4 — D-Sub 9F
INP3, INN3, OUTP3, OUTN3, ACTP3, ACTN3

Ch 0-3 ACT
J? — 6E17C009SAJ120
1734348-1
5747844-4
ACTP0, ACTN0, ACTP1, ACTN1, ACTP2, ACTN2, ACTP3, ACTN3

LVDT-Coil Driver Cable
D-Sub 9M — DB15M

Generic D-Sub 9 Cable M-F
D-Sub 9M — D Connector 9

AI Chassis #1
D1101521

AI Out 1-4
J1 — D Connector 9

High Power Coil Driver #1

J2 — D-Sub 9F — Noise Monitor Input
J3 — D-Sub 9M — Voltage Monitor Outputs
J4 — D-Sub 9M — Fast Current Monitor Outputs
J5 — D-Sub 9M — Slow Current Monitor Outputs
PR3-HPCD-J4 — DB15F
PR3-HPCD-J3 — D-Sub 9M

Binary IO 2 DIO Input
J7 — 37 Pin D-Sub MALE
LP11, Reset Pulse, LP21, LP31, Test1, LP12, LP22, LP32, Test2, LP13, LP23, LP33, Test3, LP14, LP24, LP34, Test4, VRIa/+15, VRIa/+15, 0V

Binary IO 1 DIO Output
J6 — 37 Pin D-Sub FEMALE
LP1ON1, Channel 1 not tripped, LP2ON1, Channel 2 not tripped, LP3ON1, Channel 3 not tripped, TestMode1, Channel 4 not tripped, LP1ON2, LP2ON2, LP3ON2, TestMode2, LP1ON3, LP2ON3, LP3ON3, TestMode3, LP1ON4, LP2ON4, LP3ON4, TestMode4, VRIa/+15, VRIa/+15, 0V

High Power Coil Driver #1
Chassis: JGW-D1503504
Front Panel: JGW-D1503502
Rear Panel: JGW-D1503505,
Monitor Board: JGW-D1503510
Coil Driver Interface Board: JGW-D1504332
Main Board: JGW-D1503503

Cable F-M and Gender Bender F-F 37 pin
Tyco 1-1634587-2 — Tyco 1-1634587-2

Cable M-F 37 pin
Tyco 1-1634583-2 — Tyco 1-1634587-2

CNB/CNB (Output 2)
Tyco 1-1634583-2
N-8/9, N-A/B, O-80, O-A0, O-81, O-A1, O-82, O-A2, O-83, O-A3, O-84, O-A4, O-85, O-A5, O-86, O-A6, O-87, O-A7, O-90, O-B0, O-91, O-B1, O-92, O-B2, O-93, O-B3, O-94, O-B4, O-95, O-B5, O-96, O-B6, O-97, O-B7, P-8/9, P-A/B, NC

See Sheet 15.

CNB/CNA (Output 1)

DIO Card #2
Contec DIO-6464L-PE

CNB — PCB100WS Cable — CNA — PCB100WS Cable

CNA/ CNA (Input 1)

See Sheet 15.

CNA/CNB (Input 2)
Tyco 1-1634583-2
NC, NC, I-00, I-20, I-01, I-21, I-02, I-22, I-03, I-23, I-04, I-24, I-05, I-25, I-06, I-26, I-07, I-27, I-10, I-30, I-11, I-31, I-12, I-32, I-13, I-33, I-14, I-34, I-15, I-35, I-16, I-36, I-17, I-37, P-0/1, P-2/3, NC

The ports on the back of the BIO card are called CNA and CNB in teh Contec documentation, and the two arms of the PCB100WS splitter cable are _also_ called CNA and CNB!

Here, CNA/CNB means the CNA port and the CNB cable.

Title	BS Suspension Cabling - GAS LVDT Driver Actuation/BIO	
Size: A3	Number: JGW-D1503600 13	Revision: -v15
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IP LVDT Driver Readout

Inputs from F0 LVDTs (see Sheet 6)

(LVDT/ACT Distributor - see Sheet 12)
Chassis: JGW-D1402124,
Front Panel: JGW-D1402827
Rear Panel: JGW-D1402828,
Board: JGW-D1402117 #1

Front Panel

Rear Panel

Ch 4-7 LVDT-IN

J5

INP0	1	
INN0	6	
INP1	2	11
INN1	7	
INP2	3	10
INN2	8	
INP3	4	
INN3	9	
	5	

6E17C009SAJ120

Ch 4

J1

	1	INP0
	6	INN0
11	2	OUTP0
	7	OUTN0
10	3	ACTP0
	8	ACTN0
	4	
	9	
	5	

D-Sub 9F

Ch 5

J2

	1	INP1
	6	INN1
11	2	OUTP1
	7	OUTN1
10	3	ACTP1
	8	ACTN1
	4	
	9	
	5	

D-Sub 9F

Ch 4-7 LVDT-OUT

J6

OUTP0	1	
OUTN0	6	
OUTP1	2	11
OUTN1	7	
OUTP2	3	10
OUTN2	8	
OUTP3	4	
OUTN3	9	
	5	

6E17C009SAJ120

Ch 6

J3

	1	INP2
	6	INN2
11	2	OUTP2
	7	OUTN2
10	3	ACTP2
	8	ACTN2
	4	
	9	
	5	

D-Sub 9F

Ch 4-7 ACT

J7

ACTP0	1	
ACTN0	6	
ACTP1	2	11
ACTN1	7	
ACTP2	3	10
ACTN2	8	
ACTP3	4	
ACTN3	9	
	5	

6E17C009SAJ120
1734348-1
5747844-4

Ch 7

J4

	1	INP3
	6	INN3
11	2	OUTP3
	7	OUTN3
10	3	ACTP3
	8	ACTN3
	4	
	9	
	5	

D-Sub 9F

Generic D-Sub 9 Cable M-F

D-Sub 9M — D Connector 9

Generic D-Sub 9 Cable M-F

D-Sub 9M — D Connector 9

See sheet 15.

(LVDT Driver - see Sheet 12)
Chassis: JGW-D1402826,
Main Board: JGW-D1301467
Input Boards (2): JGW-D1301467
Front Panel: JGW-D1402827

LVDT CARD 2 (Left)

J1

	1	INP0
	6	INN0
	2	INP1
	7	INN1
10	3	INP2
	8	INN2
11	4	INP3
	9	INN3
	5	

D-Sub 9M

LVDT MAIN (Right)

J1

	1	
	6	
	2	
	7	
10	3	
	8	
11	4	
	9	
	5	

D-Sub 9M

LVDT CARD 2 (Right)

J2

	1	OUTP0
	6	OUTN0
	2	OUTP1
	7	OUTN1
10	3	OUTP2
	8	OUTN2
11	4	OUTP3
	9	OUTN3
	5	

D-Sub 9M

Gender Bender F-F

D Connector 9 — D Connector 9

Generic D-Sub 9 Cable M-F

D-Sub 9M — D Connector 9

AA Chassis #1
JGW-D1100621

AA In 16-20

J1

	1	
	6	
	2	
	7	
10	3	
	8	
11	4	
	9	
	5	

D-Sub 9M

Title	BS Suspension Cabling - IP LVDT Driver Readout		
Size A3	Number JGW-D1503600 14		Revision -v15
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IP LVDT Driver Actuation/BIO

Inputs from IP LVDTs (see Sheet 6)

(LVDT/ACT Distributor - see Sheet 12)
Chassis: JGW-D1402124,
Front Panel: JGW-D1402827
Rear Panel: JGW-D1402828,
Board: JGW-D1402117 #1

Front Panel

Rear Panel

Ch 4

J1 — D-Sub 9F

1	INP0	
6	INN0	
2	OUTP0	
7	OUTN0	
3	ACTP0	
8	ACTN0	
4, 9, 5		

Ch 4-7 LVDT-IN

J5 — 6E17C009SAJ120

1	INP0
6	INN0
2	INP1
7	INN1
3	INP2
8	INN2
4	INP3
9	INN3
5	
11	11
10	10

See sheet 14.

Ch 5

J2 — D-Sub 9F

1	INP1
6	INN1
2	OUTP1
7	OUTN1
3	ACTP1
8	ACTN1
4, 9, 5	
11	
10	

Ch 4-7 LVDT-OUT

J6 — 6E17C009SAJ120

OUTP0	1
OUTN0	6
OUTP1	2
OUTN1	7
OUTP2	3
OUTN2	8
OUTP3	4
OUTN3	9
5	
11	11
10	10

See sheet 14.

Ch 6

J3 — D-Sub 9F

1	INP2
6	INN2
2	OUTP2
7	OUTN2
3	ACTP2
8	ACTN2
4, 9, 5	
11	
10	

Ch 7

J4 — D-Sub 9F

1	INP3
6	INN3
2	OUTP3
7	OUTN3
3	ACTP3
8	ACTN3
4, 9, 5	
11	
10	

Ch 4-7 ACT

J7 — 6E17C009SAJ120

1734348-1
5747844-4

ACTP0	1
ACTN0	6
ACTP1	2
ACTN1	7
ACTP2	3
ACTN2	8
ACTP3	4
ACTN3	9
5	
11	11
10	10

LVDT-Coil Driver Cable

D-Sub 9M — DB15M

1	1
6	9
2	2
7	10
3	3
8	11
4	4
9	12
5	5
	13
	6
	14
	7
	15
	8
10	16
11	17

AI Chassis #2 D1101521

AI Out 5-8

J? — D Connector 9

1	11
6	10
2	
7	
3	
8	
4	
9	
5	

Generic D-Sub 9 Cable M-F

D-Sub 9M — D Connector 9

1	1
6	6
2	2
7	7
3	3
8	8
4	4
9	9
5	5
10	10
11	11

High Power Coil Driver #0

Noise Monitor Input — J? — D-Sub 9F

1	
6	
2	
7	
3	
8	
4	
9	
5	
11	
10	

Voltage Monitor Outputs — J? — D-Sub 9M

5	
9	
4	
8	
3	
7	
2	
6	
1	
11	
10	

Fast Current Monitor Outputs — J? — D-Sub 9M

5	
9	
4	
8	
3	
7	
2	
6	
1	
11	
10	

Slow Current Monitor Outputs — J? — D-Sub 9M

5	
9	
4	
8	
3	
7	
2	
6	
1	
11	
10	

J4 — DB15F

8	
15	
7	
14	
6	
13	
5	
12	
4	
11	
3	
10	
2	
9	
1	
16	
17	

BS-HPCD-J3 — D-Sub 9M

1	
6	
2	
7	
3	
8	
4	
9	
5	
10	
11	

Binary IO 2 DIO Input — J? — 37 Pin D-Sub MALE

1	
20	
LP11	2
Reset Pulse	21
LP21	3
	22
LP31	4
	23
Test1	5
	24
LP12	6
	25
LP22	7
	26
LP32	8
	27
Test2	9
	28
LP13	10
	29
LP23	11
	30
LP33	12
	31
Test3	13
	32
LP14	14
	33
LP24	15
	34
LP34	16
	35
Test4	17
	36
VRla/+15	18
VRla/+15	37
	19
38	38
39	39
0V	

Binary IO 1 DIO Output — J? — 37 Pin D-Sub FEMALE

1	
20	
LP1ON1	2
Channel 1 not tripped	21
LP2ON1	3
Channel 2 not tripped	22
LP3ON1	4
Channel 3 not tripped	23
TestMode1	5
Channel 4 not tripped	24
LP1ON2	6
	25
LP2ON2	7
	26
LP3ON2	8
	27
TestMode2	9
	28
LP1ON3	10
	29
LP2ON3	11
	30
LP3ON3	12
	31
TestMode3	13
	32
LP1ON4	14
	33
LP2ON4	15
	34
LP3ON4	16
	35
TestMode4	17
	36
VRla/+15	18
VRla/+15	37
	19
38	38
39	39
0V	

High Power Coil Driver #0
Chassis: JGW-D1503504
Front Panel: JGW-D1503502
Rear Panel: JGW-D1503505,
Monitor Board: JGW-D1503510
Coil Driver Interface Board: JGW-D1504332
Main Board: JGW-D1503503

Cable F-M and Gender Bender F-F 37 pin

Tyco 1-1634587-2 Tyco 1-1634587-2

CNB/CNA (Output 1)

Tyco 1-1634583-2

1	N-8/9
20	N-A/B
2	O-80
21	O-A0
3	O-81
22	O-A1
4	O-82
23	O-A2
5	O-83
24	O-A3
6	O-84
25	O-A4
7	O-85
26	O-A5
8	O-86
27	O-A6
9	O-87
28	O-A7
10	O-90
29	O-B0
11	O-91
30	O-B1
12	O-92
31	O-B2
13	O-93
32	O-B3
14	O-94
33	O-B4
15	O-95
34	O-B5
16	O-96
35	O-B6
17	O-97
36	O-B7
18	P-8/9
37	P-A/B
19	NC

See Sheet 13.

CNA/ CNB (Input 2)

(DIO Card #2)

Contec DIO-6464L-PE

See Sheet 13.

CNB — CNA

(PCB100WS Cable) — (PCB100WS Cable)

CNB/CNB (Output 2)
See Sheet 13.

Cable M-F 37 pin

Tyco 1-1634583-2 Tyco 1-1634587-2

CNA/CNA (Input 1)

Tyco 1-1634583-2

1	NC
20	NC
2	I-00
21	I-20
3	I-01
22	I-21
4	I-02
23	I-22
5	I-03
24	I-23
6	I-04
25	I-24
7	I-05
26	I-25
8	I-06
27	I-26
9	I-07
28	I-27
10	I-10
29	I-30
11	I-11
30	I-31
12	I-12
31	I-32
13	I-13
32	I-33
14	I-14
33	I-34
15	I-15
34	I-35
16	I-16
35	I-36
17	I-17
36	I-37
18	P-0/1
37	P-2/3
19	NC

Title	BS Suspension Cabling - IP LVDT Driver Actuation/BIO	
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Pico and Stepper Drivers

Outputs to IM Picos (see Sheet 3)

Outputs to BF Picos (see Sheet 4)

Output to BF Stepper (see Sheet 4)

Output to F1 Stepper (see Sheet 4)

Outputs to F0 Steppers (see Sheet 7)

AC

AC

PoE

Ethernet Hub

LAN Cable

LAN Cable

LAN Cable

LAN Cable

LAN Cable

LAN Cable

The connectors for the pico drivers are RJ22 with four pins.
I couldn't find Altium versions, so I used a random four-pin connector.

Newport 8742
Pico Driver #0
"BS_IM"
10.68.150.16

J1
1 NC
2 PR3-IM-PP-GND
3 PR3-IM-PP-MOTOR
4 PR3-IM-PP-GND
Comment: RJ22

J2
1 NC
2 PR3-IM-PR-GND
3 PR3-IM-PR-MOTOR
4 PR3-IM-PR-GND
Comment: RJ22

J3
1 NC
2 PR3-IM-PY-GND
3 PR3-IM-PY-MOTOR
4 PR3-IM-PY-GND
Comment: RJ22

Newport 8742
Pico Driver #1
"BS_BF"
10.68.150.17

J1
1 NC
2 PR3-BF-PP-GND
3 PR3-BF-PP-MOTOR
4 PR3-BF-PP-GND
Comment: RJ22

J2
1 NC
2 PR3-BF-PR-GND
3 PR3-BF-PR-MOTOR
4 PR3-BF-PR-GND
Comment: RJ22

J3
1
2
3
4
Comment: RJ22

Stepper Driver #0:
Chassis: JGW-D1605635
Board: Newport TMCM-6110
Serial: MOXA NPort 5100A
10.68.150.50

J-MOTOR-0
1 BS-BF-SV-A1
6 BS-BF-SV-A2
2 BS-BF-SV-B1
7 BS-BF-SV-B2
11
10
3 8 4 9 5
D-Sub 9F

Female
Male
CI0104P1VK0-LF
CVIlux CI01 series,
4 pins, 2mm pitch

J-MOTOR-1
1 BS-F1-SV-A1
6 BS-F1-SV-A2
2 BS-F1-SV-B1
7 BS-F1-SV-B2
11
10
3 8 4 9 5
D-Sub 9F

J-MOTOR-2
J-MOTOR-3
J-MOTOR-4
J-MOTOR-5
1 6 2 7 3 8 4 9 5
11
10
D-Sub 9F

Stepper Driver #1
Chassis: JGW-D1605365
Board: TMCM-6110
Serial: MOXA NPort 5100A
10.68.150.51

NOTE: 3 channels use switches

J-MOTOR-0
BS-F0-S1-A1 1
BS-F0-S1-A2 6
BS-F0-S1-B1 2
BS-F0-S1-B2 7
BS-F0-S1-SA1 3
BS-F0-S1-SA2 8
BS-F0-S1-SB1 4
BS-F0-S1-SB2 9
5
11
10
D-Sub 9F

J-MOTOR-1
BS-F0-S2-A1 1
BS-F0-S2-A2 6
BS-F0-S2-B1 2
BS-F0-S2-B2 7
BS-F0-S1-SA1 3
BS-F0-S1-SA2 8
BS-F0-S1-SB1 4
BS-F0-S1-SB2 9
5
11
10
D-Sub 9F

J-MOTOR-2
BS-F0-S3-A1 1
BS-F0-S3-A2 6
BS-F0-S3-B1 2
BS-F0-S3-B2 7
BS-F0-S1-SA1 3
BS-F0-S1-SA2 8
BS-F0-S1-SB1 4
BS-F0-S1-SB2 9
5
11
10
D-Sub 9F

J-MOTOR-3
BS-F0-SV-A1 1
BS-F0-SV-A2 6
BS-F0-SV-B1 2
BS-F0-SV-B2 7
3 8 4 9 5
11
10
D-Sub 9F

J-MOTOR-4
BS-F0-SY-A1 1
BS-F0-SY-A2 6
BS-F0-SY-B1 2
BS-F0-SY-B2 7
3 8 4 9 5
11
10
D-Sub 9F

J-MOTOR-5
1 6 2 7 3 8 4 9 5
11
10
D-Sub 9F

Title: BS Suspension Cabling - Pico and Stepper Drivers		
Size: A3	Number: JGW-D1503600 16	Revision: -v15
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3 Feedthroughs

Geophone Readout

Inputs from F0
Geophones
(see Sheet 8)

Geophone Distributor
D1402120
Front Panel
D1402122
Board
D1402121

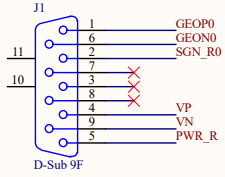
Geophone Distributor
D1402120
Rear Panel
D1402123
Board
D1402121

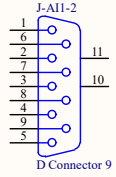
Generic D-Sub 9 Cable M-F

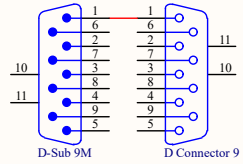
AA Chassis #0
JGW-D1100621

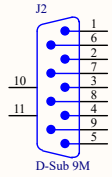
AA In 21-24

Ch 0

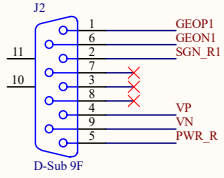




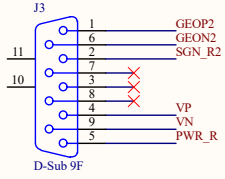




Ch1

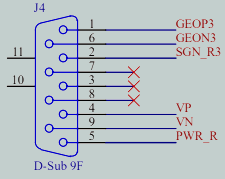


Ch 2



(Unused)

Ch 3



Title: BS Suspension Cabling - Geophone Readout		
Size: A3	Number: JGW-D1503600	Revision: -v15
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OpLev Etc

-v15: OutConfigBoards added by Izumi-san-tachi, klog 4879, 2018-04-28

OL QPD Amp 1
D1402411

J1
Anode_A_OUT+
Anode_A_OUT-
Anode_B_OUT+
Anode_B_OUT-
Anode_C_OUT+
Anode_C_OUT-
Anode_D_OUT+
Anode_D_OUT-
+15
GND
-15
D Connector 15

Generic D-Sub 15 Cable M-F
DB15M
DB15F

OL QPD Amp 2
D1402411

J2
Anode_A_OUT+
Anode_A_OUT-
Anode_B_OUT+
Anode_B_OUT-
Anode_C_OUT+
Anode_C_OUT-
Anode_D_OUT+
Anode_D_OUT-
+15
GND
-15
D Connector 15

Generic D-Sub 15 Cable M-F
DB15M
DB15F

Whitening Chassis
D1302087
Front Panel
D1302088
Board
D1302081+D1402416

J4 (Input 1)
Ch0_P
Ch0_N
Ch1_P
Ch1_N
Ch2_P
Ch2_N
Ch3_P
Ch3_N
Channel (0-3)
+15
GND
-15
JP14
Header 2
GND
(Defalt Open)
D Connector 15_1_male
MALE

J1 (output 1)
WP1
WN1
WP2
WN2
WP3
WN3
WP4
WN4
D Connector 9
FEMALE

Whitening Chassis
D1302087
Rear Panel
D1302084
Board
D1302081+D1402416

J5 (input 2)
Ch0_P
Ch0_N
Ch1_P
Ch1_N
Ch2_P
Ch2_N
Ch3_P
Ch3_N
Channel (0-3)
+15
GND
-15
JP15
Header 2
GND
(Defalt Open)
D Connector 15_1_male
MALE

J2 (Output 2)
WP2
WN2
WP3
WN3
WP4
WN4
WP5
WN5
D Connector 9
FEMALE

Generic D-Sub 9 Cable M-F
D-Sub 9M
D-Sub 9F

Generic D-Sub 9 Cable M-F
D-Sub 9M
D-Sub 9F

AA Chassis #0
D1100621

AA In 25-28
J7
D-Sub 9M

AA In 29-32
J8
D-Sub 9M

(Whitening Chassis Continuted)

P1 (Binary Input 1)

P3 (Binary Input 2)

OutConfigBoard #1
D1605310

OutConfigBoard #2
D1605310

Title: BS Suspension Cabling - OpLev Etc		
Size: A3	Number: JGW-D1503600	Revision: -v15
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