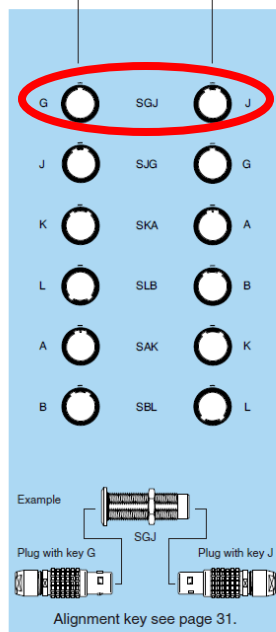
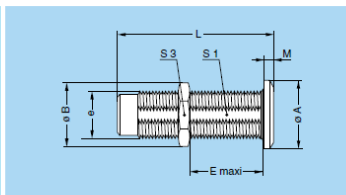
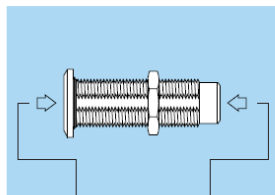


Wiring for 36 two-stage dc-SQUIDs for MMC-array readout

12 cables consisting of:

Vacuum feed through: Lemo "coupler" **SGJ.3B.324.CLLPV** (flange-side: female, vacuum-side: male)

●● Fixed coupler, nut fixing, key (G) or keys (A, B, J, K and L) at the flange end and key (G) or keys (A, B, J, K and L) at the other end, watertight or vacuumtight



Reference		Contacts Type	Dimensions (mm)							
Model	Series		A	B	e	E	L	M	S1	S3
SGJ	0B	female – male	14	13.8	M10x0.75	17	34	2.0	9.0	12
SJG		male – female								
SGJ	1B	female – male	17	15.8	M12x1.00	28	39	2.5	10.5	14
SJG		male – female								
SGJ	2B	female – male	20	21.5	M16x1.00	25	44	4.0	15.0	19
SJG		male – female								
SGJ	3B	female – male	25	27.0	M20x1.00	30	53	4.0	18.5	24
SJG		male – female								
SAK		female – male								
SBL		male – female								
SGJ	4B	female – male	34	34.0	M25x1.00	50	65	4.0	23.5	30
SJG		male – female								
SAK		female – male								
SBL		male – female								
SGJ	5B	female – male	45	40.0	M35x1.00	58	80	5.0	33.5	–
SJG		male – female								
SAK		female – male								
SBL		male – female								

P4 Panel cut-out (page 152)

P9 Panel cut-out 1B series (page 152)

Note: for this fixed coupler, the first contact type mentioned is always the one at the flange end.
On request these couplers can be produced in other series, with other keys.
The 5B series is delivered with a round nut.

For details see: <http://www.lemo.com/pdf/SGJ.3B.324.CLLPV.pdf>

In this first key "G" is on the flange side and Key "J" is on the other side.

On "G" it has female socket, hence male plug will mate.

While on key "J" has male contacts, hence plug with female contacts will mate.

Ihre Anfrage: Herr Fleischmann vom 08.07.2016
Vertreter: VT 6 Bestellung bitte an: region-h@lemo.de
Versand: UPS Standard
Lieferbedingung: ab Werk München

Sehr geehrter Herr Fleischmann,

wir danken für Ihre Anfrage und bieten an:

Pos	Artikel-Nr. / Artikelbezeichnung	Menge	Lieferzeit	Einzelpreis	Rabatt
1	SGJ.3B.324.CLLPV AppD.vakuumdicht	12	9 Wochen	102,50	
1.1	SGJ.3B.324.CLLPV AppD.vakuumdicht	36	9 Wochen	102,50	2,50%

LEMO Elektronik GmbH, Hanns-Schwindt-Str. 6, 81829 München, GERMANY

Tel : (49 89) 42 77 03, Fax : (49 89) 420 21 92, Mail : info@lemo.de

Cable assembly

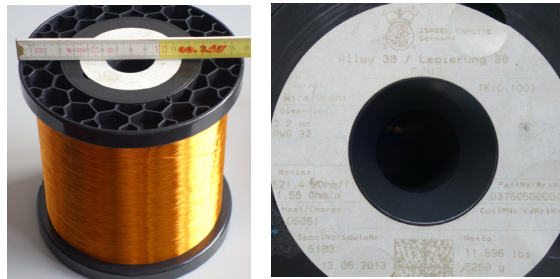
To the vacuum side (the non-flange-side) of this vacuum tight “coupler”, which has male contacts, we will connect the warm end of the cable assembly produced by Tekdata.

- **Termination warm end:** Lemo isolation piece(female): **EGG.3B.324.ZLL**

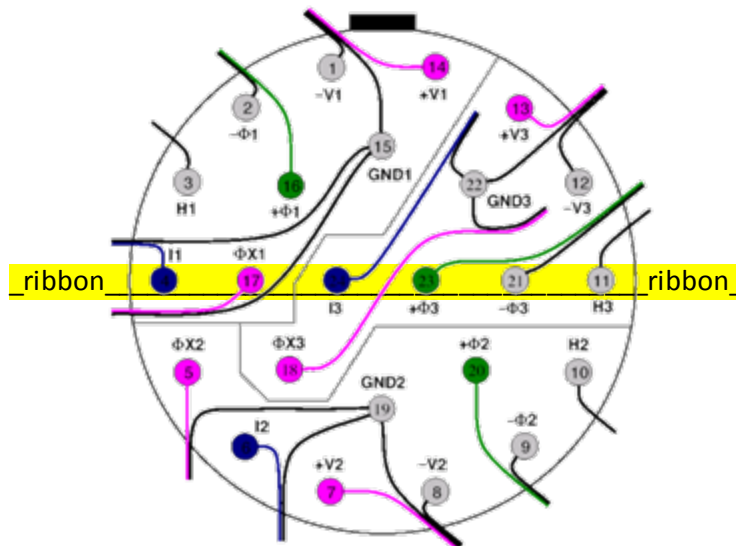
2	EGG.3B.324.ZLL Iso	12	ab Lager	26,84	
2.1	EGG.3B.324.ZLL Iso	36	ab Lager	26,84	2,50%

- **Wires:**

- 30 insulated wires
- Alloy-30 (Cu98Ni2) from Isabellenhütte in June 2013
- Length: 2.2 m
- Diameter: 0.2 mm (AWG 32)
- Resistance: 1.56 Ohm/m,
therefore ~3.4 Ohm per wire and ~6.9 Ohm round trip for a pair
- Spool: about 16cm x 16 cm (diameter), 5kg



- Grouped to 4 twisted triples and 9 twisted pairs



Top view onto the female contacts of the flange-side of the coupler, equivalent to the top view onto the female contacts of the isolation piece EGG.3B.324.ZLL. Yellow bar indicates orientation of the wire-ribbon.

ATTENTION: wires H1, H2, H3 (pins 3, 10, 11) should form a twisted triple, even if not depicted here.

- **Order of twisted pairs and triples within the ribbon**

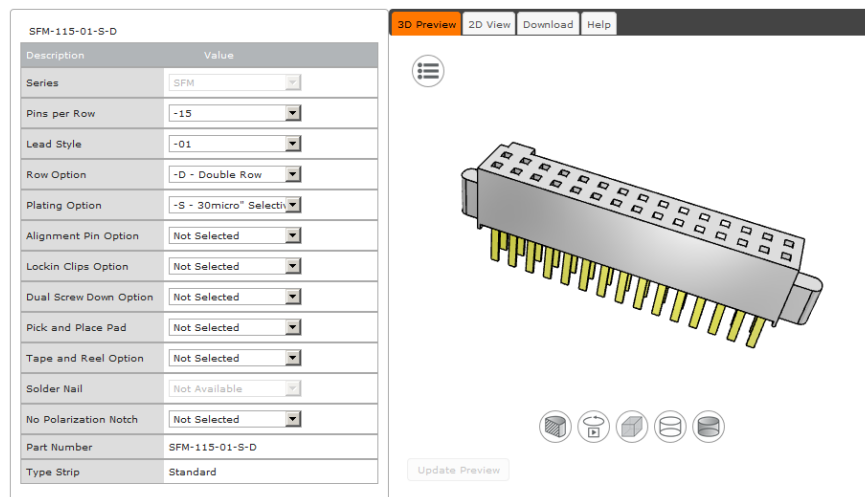
-I1	+V1	-ΦX1	+Φ1	~ 2mm	H1	-I2	+V2	-ΦX2	+Φ2	~ 2mm	-I3	+V3	-ΦX3	+Φ3
+H1	-V1	+ΦX1	-Φ1	(~ 10	H2	+H2	-V2	+ΦX2	-Φ2	(~10	+H3	-V3	+ΦX3	-Φ3
	GND1			Nomex)	H3		GND2			Nomex)		GND3		

I assume this will add up to a total width of the ribbon of 15mm to 18mm, depending on details of the woofing process and whether or not there is a Nomex fibre also between all neighboring pairs/triples. Both is fine. Width should not exceed the width of the Samtec connector described below, which is about 20 mm.

The thickness of the ribbon at the 2 Nomex spacers between the 3 channels, consisting of about 10 Nomex fibers each, should not exceed the thickness of the rest of the ribbon by more than 20%.

- **Termination cold end:** Samtec Tiger Eye Socket **SFM-115-01-S-D**

- 30 female contacts
- With polarization notch
- 3d model:



- **Price at Farnell:** **5,37€** (50-100 pieces), 4,13€ (>250 pieces), 10€ (first ten)

Nr.	Hersteller / Beschreibung	Best.-Nr.	Hersteller-Teilennr.	Stückpreis	Menge	Positionspreis
1	 Wire-To-Board-Steckverbinder, Baureihe SFM, 30 Kontakt(e), Buchse, 1,27 mm, Durchsteckmontage Hersteller: SAMTEC Zulieferer-Direktversand Nicht stornierbar/nicht rückgabefähig Lieferzeit von 5 Arbeitstagen für Artikel, die vorrätig sind Verfügbarkeit: 200 Produkt vorrätig Hinzufügen Positionshinweis	1802039	SFM-115-01-S-D	5,37 €	50	268,50 €

- **Pin assignment** (View onto the solder side of **SFM-115-01-S-D** shown above): here, only one wire per pin

2 -I1	4 +H1	6 H1	8 +Φ 1	10 -Φ 1	12 -I2	14 +H2	16 H2	18 +Φ 2	20 -Φ 2	22 -I3	24 +H3	26 H3	28 +Φ 3	30 -Φ 3
1 +V1	3 -V1	5 GND1	7 -Φ X1	9 +Φ X1	11 +V2	13 -V2	15 GND2	17 -Φ X2	21 +Φ X2	23 +V3	25 GND3	27 -Φ X3	29 +Φ X3	

Twisted pairs: $\pm I_1$, $\pm \Phi_1$, $\pm \Phi_{X1}$, $\pm I_2$, $\pm \Phi_2$, $\pm \Phi_{X2}$, $\pm I_3$, $\pm \Phi_3$, $\pm \Phi_{X3}$

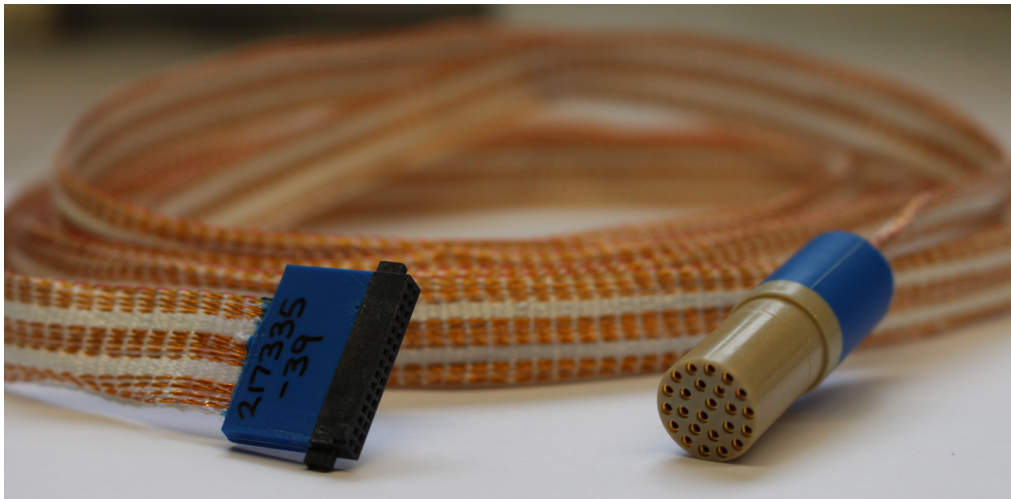
Twisted triples: $+V_1/-V_1/GND_1$, $+V_2/-V_2/GND_2$, $+V_3/-V_3/GND_3$, H1/H2/H3

As sketched in the Lemo pin assignment above, the warm ends of the wires:

$-I_1$, $-\Phi_{X1}$, GND_1 are soldered to the **GND1**-pin of Lemo-isolation piece

$-I_2$, $-\Phi_{X2}$, GND_2 are soldered to the **GND2**-pin of Lemo-isolation piece

$-I_3$, $-\Phi_{X3}$, GND_3 are soldered to the **GND3**-pin of Lemo-isolation piece



- Sockets for circuit boards in the cryostat:

Configure your Samtec product by using our Part Configurator below, then use the **Download** tab to get your 3D model. Click **Generate** at any time to update your live 3D preview.

Pins per Row	-15
Lead Style	-02
Row	-D - Double Row
Plating Option	-S - 30micro" Selective
Tail Option	Not Available
Alignment	Not Selected
Locking Clips	Not Selected
Dual Screw Down Option	Not Selected
Weld Tabs	Not Selected
Pick and Place Pad	Not Selected
Tape and Reel	Not Selected
Solder Nail Option	Not Selected
Part Number	TFM-115-02-S-D
Type Strip	Standard
A	0.226 INCH
B	0.220 INCH
C	0.000 INCH

3D Preview 2D View Download Help

Update Preview

2 **Board-to-Board-Steckverbinder, Baureihe TFM, 30 Kontakt(e), Stiftleiste, 1.27 mm** 1801928 TFM-115-02-S-D 4,62 € 50 231,00 €

Hersteller: **SAMTEC**

Zulieferer-Direktversand
Nicht stornierbar/nicht rückgabefähig
Lieferzeit von 7 Arbeitstagen für Artikel, die vorrätig sind
Ersatz erhältlich
Verfügbarkeit: **200** Produkt vorrätig

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[Löschen](#)

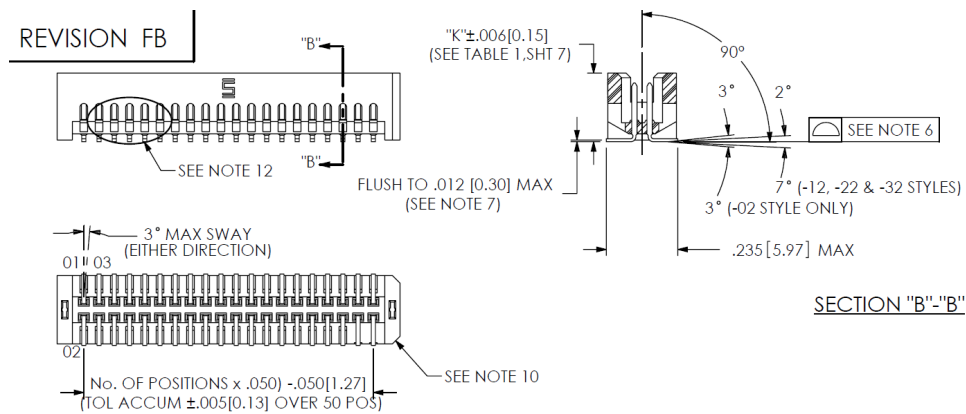


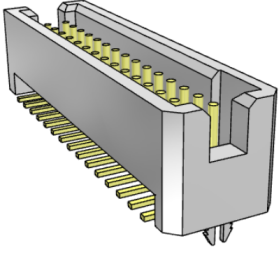
FIG 2
SURFACE MOUNT
-02, -12, -22, -32
DIFFERENT AS SHOWN, OTHERWISE SAME AS FIG 1

or with locking clamp


TFM-115-02-S-D-LC

Description	Value
Series	TFM
Pins per Row	-15
Lead Style	-02
Row	-D - Double Row
Plating Option	-S - 30micro" Selective
Tail Option	Not Available
Alignment	Not Selected
Locking Clips	-LC - Locking Clip
Dual Screw Down Option	Not Available
Weld Tabs	Not Available
Pick and Place Pad	Not Selected
Tape and Reel	Not Selected
Solder Nail Option	Not Available
Part Number	TFM-115-02-S-D-LC
Type Strip	Standard

3D Preview2D ViewDownloadHelp



Update Preview

3

Wire-To-Board-Steckverbinder, Baureihe TFM, 30 Kontakt(e), Stiftleiste, 1.27 mm, Oberflächenmontage

Hersteller: SAMTEC

Zulieferer-Direktversand
Nicht stornierbar/nicht rückgabefähig
Lieferzeit von 7 Arbeitstagen für Artikel, die vorrätig sind
Verfügbarkeit: 200 Produkt vorrätig

Hinzufügen Positionshinweis

1801988

TFM-115-02-S-D-LC

4,90 €

50

Aktualisieren

Löschen

245,00 €

With Right Angle Leads (**Attention:** I missed the fact, that 'looking downstream' = towards the SQUIDs the notch is at the right-top. Therefore the pins for the amplifier-SQUIDs are in the "lower row" = "upstream row" and the ones for the first-stage SQUIDs are in the "upper row" = "downstream row". That's sad, as the pin order fits perfect only when the notch is on the side of the circuitboard edge and the pinrow without notch is facing the SQUIDs. But the connector probably doesn't exist in this orientation.

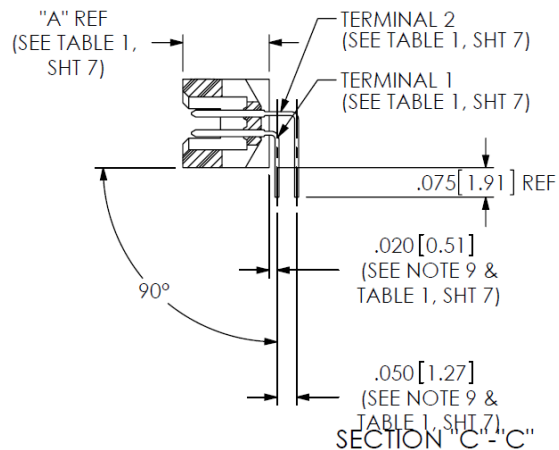
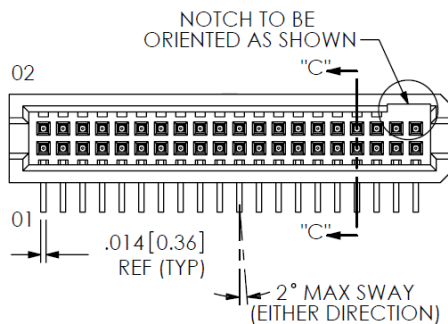
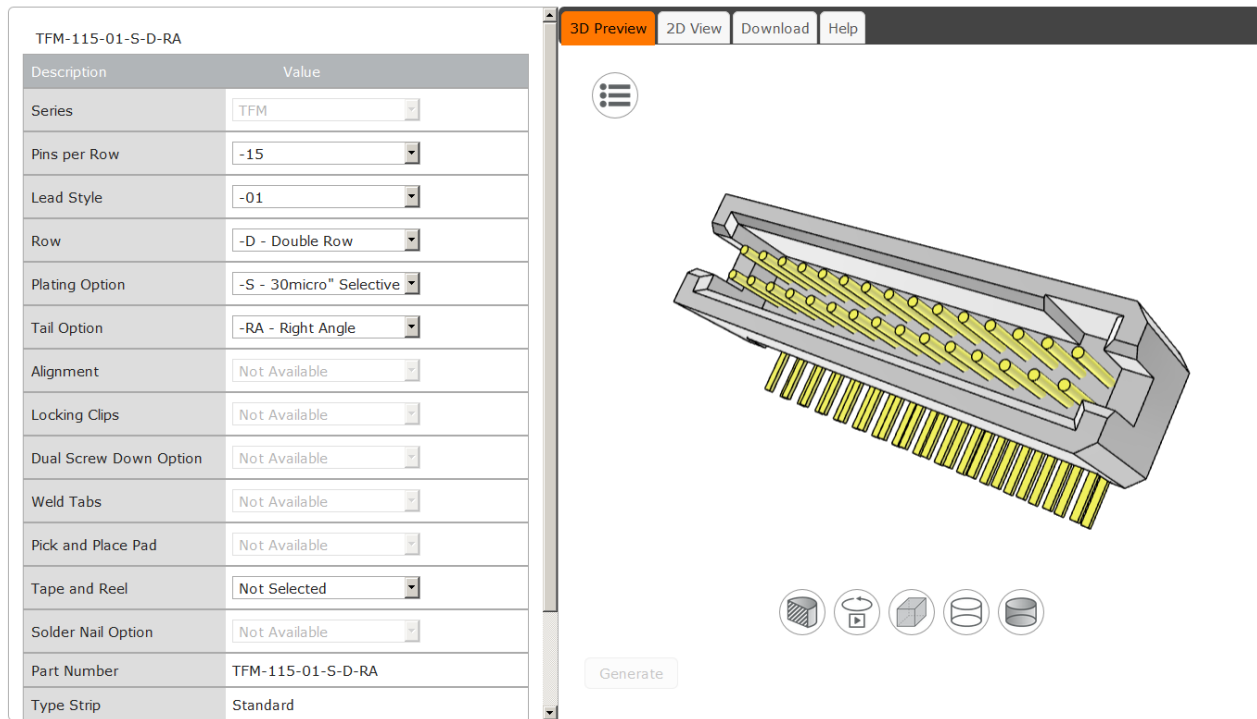


FIG 5
-RA OPTION
DIFFERENT AS SHOWN, OTHERWISE SAME AS FIG 1

or with solder nail

3D Preview

2D View

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Help

Update Preview

Reverse	-15	
Pins per Row	-15	
Lead Style	-02	
Row	-D - Double Row	
Plating Option	-S - 30micro" Selective	
Tail Option	Not Available	
Alignment	Not Selected	
Locking Clips	Not Selected	
Dual Screw Down Option	Not Selected	
Weld Tabs	Not Selected	
Pick and Place Pad	Not Selected	
Tape and Reel	Not Selected	
Solder Nail Option	-SN - Solder Nail for .06	
Part Number	TFM-115-02-S-D-SN	
Type Strip	Standard	
A	0.226	INCH
B	0.220	INCH
C	0.000	INCH

--- not found at Farnell ---