

Cables and Connectors

interfaceforce

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interface
FORCE MEASUREMENT SOLUTIONS

interfaceforce® e.K. · Schwaighofstr. 29a · D-83684 Tegernsee · interfaceforce.de

Interconnect Cable Assembly

Sensor	Sensor End	Instrument End				
		Universal	4850, 9825, VSC2, DMA, ISG, SGA	9840	9850	9325
Model	Plug Type	Pigtail	Screw Term	DE-9P	DE-9P	770-8
1000, 1100, 1200 Standard Type	PC06A-10-6S(SR)	CT-101-10	CT-101-10	CT-173-10	CT-516-10	CT-903-10
1000, 1100, 1200 Bayonet Type	PT06A-10-6S(SR)	CT-152-10	CT-152-10	CT-175-10	CT-249-10	CT-767-10
1216	PT06A-12-8S(SR)	CT-222-10	CT-222-10	CT-246-10	*	
1500	PT06A-10-6S(SR)	CT-152-10	CT-152-10	CT-175-10	CT-249-10	
1600, 1800	PT06A-12-8S(SR)	CT-153-10	CT-153-10	CT-177-10	*	CT-917-10
2420, 2430	PT06A-10-6S(SR)	CT-179-10	CT-179-10	CT-254-10	CT-251-10	
2440, 2450	MS3106A-14S-6S	CT-204-10	CT-204-10	CT-260-10	*	
2160, 2161	MS3106A-14S-5S	CT-259-10	CT-259-10	CT-191-10	*	CT-787-10
5200	PC06A-10-6S(SR)	CT-101-10	CT-101-10	CT-173-10	*	
WMC-20K, 30K, 50K	PC06A-10-6S(SR)	CT-179-10	CT-179-10	CT-254-10	*	
SSM	PC06A-10-6S(SR)	CT-101-10	CT-101-10	CT-173-10	*	

For connecting transducers with receptacles to instrumentation

Cable Specification For Above Assemblies

Note: "CT" prefix on cable assembly order numbers is for the most common polarity which is tension upscale. For compression upscale substitute "CC".

"-10" suffix on cable assembly part number is the most common cable length of 10 ft. Other lengths may be ordered by substituting the desired length in feet.

Example: For a 20 ft cable to connect to a model 1221HL-50K transducer and have the convention of the green pigtail as + signal for a compression load, order CC-101-20.

*Call factory for more information.

Instrument Connection Selection Guide

Instrument		Extra Mating Connector		Order number for extra plug plus installation on end of transducer integral cable	
Model	Receptacle	Type	Order Number	Tension Upscale	Compression Upscale
9325	770-8	770-8	CN-219	MIC-9320-T	MIC-9320-C
9825	DE-9S	DE-9P	CN-212	MIC-9830-T	MIC-9830-C
9840	DE-9S	DE-9P	CN-212	MIC-9840-T	MIC-9840-C
9850	DE-9S	DE-9P	CN-212	MIC-9850-T	MIC-9850-C

Instruments not listed use screw terminal connections.

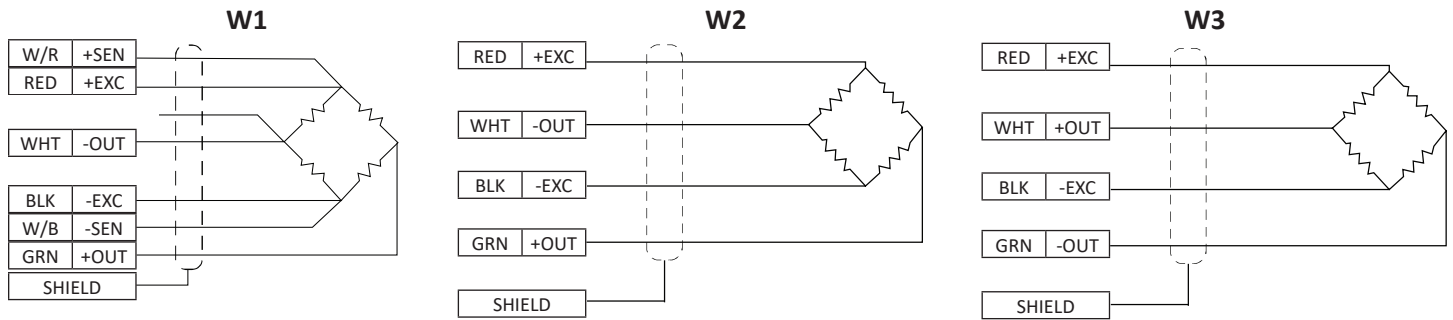
Electrical Information

Load Cell Series	Cell Type	Upscale (4) Mode	Integral Cable Wiring	Std. Cable Type	Cable Length, Feet (5)	Connector Wiring	Mating Connector (2)
1000	Univ.	Tension	W1	A	10	C1	PC06W-10-6S(SR)
1100	Univ.	Tension	W1	A	10	C1	PC06W-10-6S(SR)
1100	Comp.	Tension	W1	A	10	C1	PC06W-10-6S(SR)
1200	Univ.	Tension	W1	A	10	C1	PC06W-10-6S(SR)
1200	Comp.	Tension	W1	A	10	C1	PC06W-10-6S(SR)
12x8	Univ.	Tension	-	-	-	C6	PT06A-10-6S(SR)
1500	Univ.	Tension	-	-	-	C1	PT06A-10-6S(SR)
1600	Univ.	Tension	-	-	-	C2	PT06A-12-8S(SR)
1600	Comp.	Tension	-	-	-	C2	PT06A-12-8S(SR)
1700	Univ.	Tension	-	-	-	C6	PT06A-10-6S(SR)
1800	Univ.	Tension	-	-	-	C2	PT06A-12-8S(SR)
3200	Univ.	Tension	W2	B	20	-	-
3200	Comp.	Tension	W2	B	20	-	-
4200	Comp.	Tension	W2	B	20	-	-
4600	Comp.	Tension	W2	B	20	-	-
5200	Univ.	Tension (1)	W1	A	10	C1	PC06W-10-6S(SR)
SSB	Comp.	Comp.	W2	C	5	-	-
MB, MBP	Comp.	Comp.	W2	C	5	-	-
SM	Univ.	Tension	W2	C	5	-	-
SSM	Univ.	Tension	W2	A	10	C1	PC06W-10-6S(SR)
SMT	Univ.	Tension	W2	D	5	-	-
SPI	Univ.	Comp.	W2	C	5	-	-
SML	Univ.	Tension	W2	D	5	-	-
LBM	Comp.	Tension	W3	G	5	-	-
LBS	Comp.	Tension	W2	G	5	-	-
LW	Comp.	Comp.	W2	-	5	-	-
WeighCheck	Comp.	Tension	W2	B	30	-	-
WMC	Univ.	Tension	W3	G	-	-	-
WMC ≥15K	Univ.	Tension	-	-	-	C3	PT06A-10-6S(SR)
2410-2430	Univ.	Tension	-	-	-	C3	PT06A-10-6S(SR)
2440-2450	Univ.	Tension	-	-	-	C3	MS3106A-145-6S
2100	Univ.	Tension	-	-	-	C4	MS3106A-145-6S
2100	Comp.	Tension	-	-	-	C4	MS3106A-145-6S
MRT	Torque	CW	W2	D	5	-	-
ULC	Univ.	Tension	W2	D	5	-	-
MCC	Comp.	Comp.	W2	E	5	-	-
CX	-	-	-	-	--	C5	PT06A-12-8S(SR)

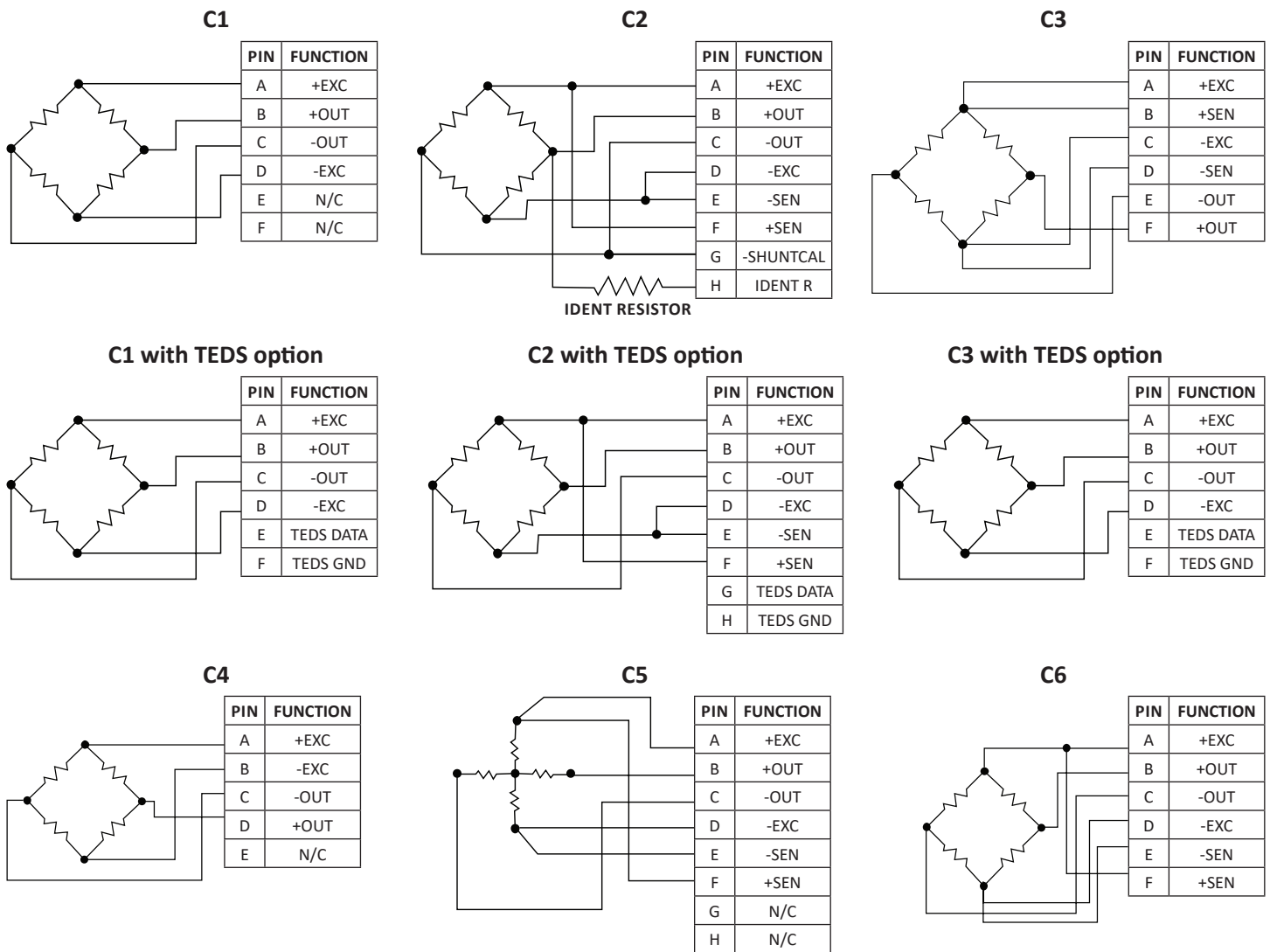
- Note: 1) Thrust axis only.
2) Mating connector for the stock version of cell. Consult factory for alternate connectors and specials.
3) Consult factory. Several connectors and mating cable types are available.
4) Indicates the loading direction which causes a positive output.
5) Stock length; other lengths available on special order.

LOAD CELL INTEGRAL CABLES				
Cable Type	Wire Size	No. of Wires	Shield	Description
A	22 AWG	7	Braid	Heavy-duty, PVC jacket
B	22 AWG	4	Braid	Heavy-duty, polyurethane jacket
C	28 AWG	4	Braid	Tough, clear PVC jacket
D	28 AWG	4	Spiral	Ultra-flexible, black PVC jacket
E	30 AWG	4	Braid	Ultra-flexible, gray PVC jacket
F	20 AWG	4	Braid	Teflon jacket
G	30 AWG	4	Braid	Teflon jacket

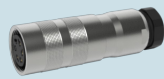
Load Cell Cable Wiring



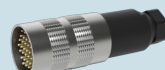
Load Cell Connector Wiring



PT06A-10-6S-SR 6-Pin
Amphenol Bayonet Connector
Female Sockets, Bayonet Lock,
Aluminum Alloy



M12 5-Pin Binder Circular
Connector
Female Sockets 423 Series,
Receptacle, Solder



M16 24-Pin Connector
Male Socket, Non-Shield,
Waterproof, IP67 Rating



DB9 9-Pin D-Sub Connector
DB9 Male Plug Type, D-Sub Connector

For high accuracy force measurement the effects of the cable on the measurement must be considered. For constant voltage excitation there are two effects of significance.

These are:

- An effect on the sensitivity due to voltage drops over the cable length.
- An effect on the thermal span characteristics of the load cell due to the change of cable resistance with temperature.

Cable Length Effects

If the load cell is sold with a cable of any length, the sensitivity is determined with the installed cable in calibration and this is not a problem. For load cells with connectors, or if the customer adds cable himself, there will be a loss of sensitivity of approximately 0.37% per 10 feet of 28 gage cable and 0.09% per 10 feet of 22 gage cable. This error can be eliminated if a six wire cable is run to the end of the load cell cable or connector and used in conjunction with an indicator that has sense lead capability.

Temperature Effects

Since cable resistance is a function of temperature, the cable response to temperature change affects the thermal span characteristics of the load cell/cable system. For 6-wire systems this effect is eliminated. For 4-wire cables the effect is compensated for in the standard cable lengths offered with the load cells if the load cell and cable are at the same temperature at the same time. For non-standard cable lengths, there will be an effect on thermal span performance. The effect of adding 10 feet of 28 gage cable is to cause a decrease in sensitivity with temperature equal to 0.0008%/°F (an amount equal to the standard Interface specification). For an added 10 feet of 22 gage cable the effect is to decrease sensitivity by 0.0002%/°F (one-fourth Interface spec). In many cases a customer can tolerate the degraded performance since our standard specification is extremely tight. However, for long cable runs or high accuracy applications, this can be a significant factor. In such cases, the best approach to the problem is to run six wires to the end of the standard cable length and sense the excitation voltage at that point. This eliminates the problem.



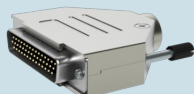
Pigtails Instrument End to Connector on Sensor End
Call factory for more information



CT-811-1 Conversion Cable
Necessary when switching from the 9320 to the 9325



770 8-Pin Binder Bayonet Connector
Male Cable Connector Unshielded, Solder, IP67 Rating



DB44 44-Pin D-Sub High Density Connector
DB44 Male Plug Type, High Density D-Sub Connectors

Interface Cables and Connectors

- Bayonet Type
- Screw Type
- Circular Type
- D-Sub Type
- Pigtails
- Custom Cable Lengths
- Conversion Cables

Interface force measurement cables and connectors are available in many design configurations for project designs requiring the highest performance.

To learn more about the Interface products or force measurement solutions call 480-948-5555.

Interface is the world's trusted leader in technology, design and manufacturing of force measurement solutions.

Our clients include a "who's who" of the aerospace, automotive and vehicle, medical device, energy, industrial manufacturing, test and measurement industries.

Interface engineers around the world are empowered to create high-level tools and solutions that deliver consistent, high quality performance. These products include load cells, torque transducers, multi-axis sensors, wireless telemetry, instrumentation and calibration equipment.

Interface, Inc., was founded in 1968 and is a US-based, woman-owned technology manufacturing company headquartered in Scottsdale, Arizona.