

Pre-Qualification Requirement Compliance Sheet

S.No.	PQR Requirement	Vendor's confirmation
1	All machineries and facilities that are required for the complete manufacture of cables, such as wire drawing, stranding, bunching, sheathing (extrusion/wrapping) and armouring processes shall be available in-house.	Available In-House / Not Available
2	All measuring instruments and testing facilities required to carry out the necessary tests that are to be conducted in process and on finished cables shall be available in-house.	Available In-House / Not Available
3	None of the stages/processes involved in the manufacturing of the cable, shall be off loaded or out-sourced.	Accepted / Not Accepted
4	Vendor should have supplied similar design of PTFE Instrumentation cables as per the technical specifications, to power plant installations in India or abroad and the same shall be in operation, satisfactorily for the past 2 years.	Document Proof Attached / Not Attached
5	Vendor should have executed and supplied at least 10 Km of cables in a single order, inclusive of all type of PTFE Instrumentation cables such as 2 Pair, 4 Pair, 8 Pair etc.	Document Proof Attached / Not Attached
6	Vendor should have facilities to carry out type tests as per Quality plan, either in-house or at NABL accredited labs.	Accepted / Not Accepted

Vendor's Sign and Seal



PURCHASE /MM/BOI
SUBDELIVERY- ENQUIRY-DEVIATION

PAGE 01 OF 01

SCHEDULE OF DEVIATION TO SUB DELIVERY ENQUIRY NO

06

DESCRIPTION	PTFE Instrumentation Cable	
SPECIFICATION/DRWG No.		
Quality Plan		
DOCUMENT REFERENCE	BHEL ENQ CALLED FOR	FIRMS ALTERNATE OFFER
Supply of PTFE Instrumentation cables shall be as per 1. Datasheet: DS:TCI:145/PTFE Instrumentation cable Rev. 00 2 .Datasheet: DS:TCI:245/PTFE Control cable Rev. 00 3.Vendor Quality Plan to be submitted along with the offer.		

CERTIFIED THAT OTHER THAN THE ABOVE DEVIATIONS, WE ARE ACCEPTING ALL THE OTHER SPECIFICATIONS AND
REQUIREMENTS IN FULL TO YOUR ENQUIRY.
STATION:

DATE:

SIGNATURE OF FIRMS REPRESENTATIVE

FIRM SEAL

NOTE 1. DEVIATIONS SHOULD BE TAKEN ONLY IN THE EXTREME CASE
2 .IF NECESSARY USE ADDITIONAL SHEETS WITH CONTROLLED NUMBER



Bharat Heavy Electricals Limited

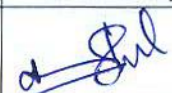
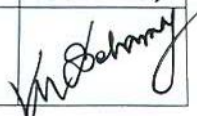
HIGH PRESSURE BOILER PLANT, TIRUCHIRAPPALLI 620 014.

CONTROLS AND INSTRUMENTATION/FB

DATA SHEET FOR PTFE INSULATED & SHEATHED, CONTROL CABLE

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

Revision History

Rev. No.	Date	Description	Prepared	Reviewed	Approved
			Blessing Jany Churchil J	Blessing Jany Churchil J	V M Selvaraaj
00	24-06-17	Initial Release			

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
1	Application		FROM FIELD INSTRUMENTS IN HOT ZONES TO FIELD JUNCTION BOXES
	Applicable Standards		JSS 51038, MIL-W-16878, IS-8130, VDE 207-P6, VDE-0815, VDE-0472, IEC 60332-3, ASTM-D-2116, IS-3975, IEC-754, ASTM-D-2843, ASTM-D-2863, IS-10810, IEEE-383, SS-4241475 & IS-10418
2	Voltage grade	V	1000
3	Temperature Rating	°C	260
4	Construction of cable		As per Constructional diagram enclosed with this Data sheet
5	Conductor:-		
a	No. Of Core		2 Core/3 core /4 Core/5 Core (As per Purchase Enquiry / Purchase order)
b	Area of Conductor	Sq.mm	1.5 / 2.5 (As per Purchase Enquiry/ Purchase order)
c	No. of Strands / Strand Dia. (for finished cable)	No./ mm	7/0.53 for 1.5 sq.mm 7/0.68 for 2.5 sq.mm (Stranded & Non-compacted)
d	Material		Silver Plated Annealed Copper Conductor
e	Grade / Standard		High Conductivity, Electrolytic grade copper conforming to IS-8130 & Silver plating conforming to JSS-51034
6	Insulation :-		
a	Material		PTFE
b	Type and Standard		VDE 207 Part-6/ASTM D 2116
c	Thickness (minimum) as per JSS-51038	mm	0.3
d	Method of application		PTFE wrapped and sintered / PTFE extruded

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
e	Core Identification		2 core → Red & Black 3 core → Red, Yellow & Blue 4 core → Red, Yellow, Blue & Black 5 core → Red, Yellow, Blue, Black & Grey
f	Volume Resistivity	Ω cm	$> 10^{14}$
13	Fillers (wherever applicable)		Flame retardant, Non-Hygroscopic, suitable for the operating temperature of the cable.
17	Inner Sheath :-		
a	Material		PTFE
b	Type and Standard		VDE 207 Part-6/ASTM D 2116
c	Thickness (minimum)	mm	0.3
d	Method of application		PTFE wrapped and sintered / PTFE extruded
e	Colour		BLACK
18	Braiding		
a	Material		Nickel Plated Copper Alloy (High Strength)
b	Strand diameter		As per JSS – 51038
c	Braid Angle		As per JSS – 51038
d	Position		Over Inner Sheath
e	Coverage	%	85 – 90
19	Outer Sheath :-		
a	Material		PTFE
b	Type and Standard		VDE 207 Part-6/ASTM D 2116
c	Method of application		PTFE wrapped and sintered / PTFE extruded
d	Thickness (Nominal)		0.5
e	Colour		As per Purchase Enquiry

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
20	Cable Marking on Outer sheath by Inkjet printing		"Manufacturer's name, Year of manufacture, PTFE, No. of Cores & Conductor size, Voltage rating, Type of Cable, FRLS" @ 1 metre interval.
21	Sequential marking on outer sheath by Inkjet printing		Every 1 Metre for Progressive Length
22	Tolerance on Outer diameter	mm	± 2
23	Tolerance on Outer diameter for the entire length	mm	1
24	Ovality	mm	1
25	Bending Radius (min)		12 times the Outer diameter
26	Standard Packing Length	metre	1000
27	Tolerance on standard packing length	%	± 5
28	Tolerance on Overall quantity	%	+ 0 / - 2
28	Non-standard Length		Last length shall be supplied in single length
29	Electrical Parameters :-		
a	Conductor DC Resistance (max.) @ 20° C as per BS-60228	Ω/km	1.5 Sq.mm – 12.2
			2.5 Sq.mm – 7.56
b	Short circuit rating of conductor for 1 second	KA	1.5 Sq.mm – 0.215
			2.5 Sq.mm – 0.35
d	Insulation Resistance (min.) @ 20°C	M Ω/km	100
e	Test Voltage - Between Conductor- Conductor	KV/minute	2
30	FRLS Properties for Inner & Outer Sheath :-		
a	Oxygen Index @ ambient temp. As per ASTM-D-2863	%	Not Less than 29
b	Temperature Index @ oxygen index 21 As per ASTM-D-2863	° C	Not Less than 250
c	Smoke density rating As per ASTM-D-2843	%	Shall not be more than 60

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

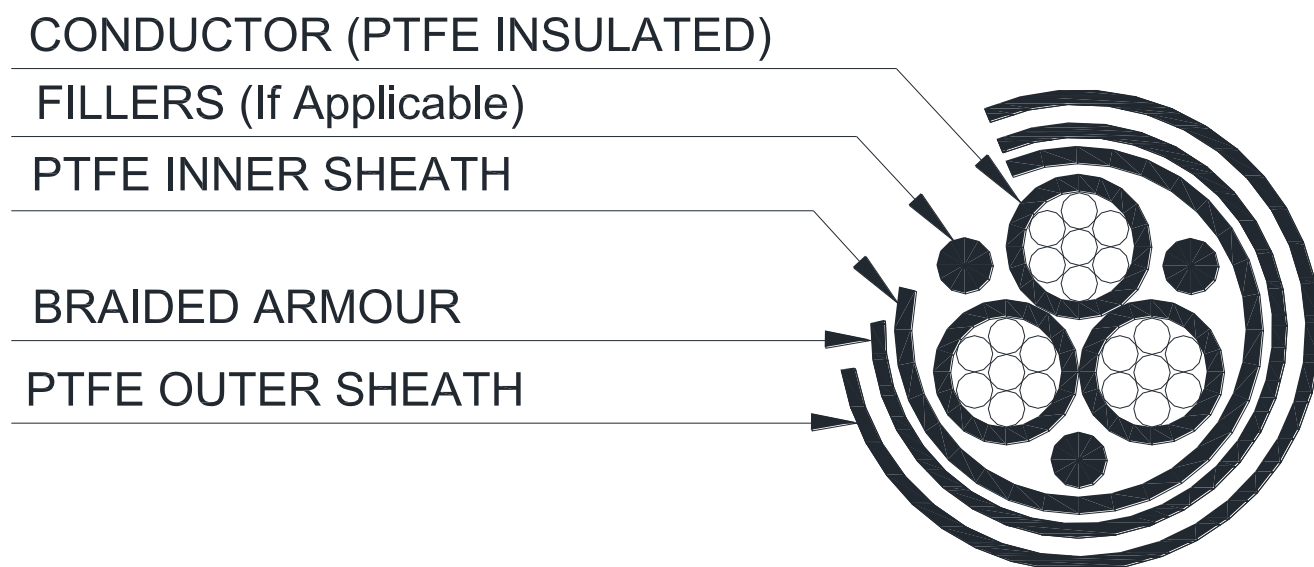
Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
d	Acid gas generation As per IEC 60754-Part 1	%	Shall not be more than 20% by weight
e	Flammability Tests As per IEC-60332-1-2		Shall pass
31	Quality Plan		Vendor Quality Plan
32	Special Properties for Outer sheath		Material of outer sheath shall be resistant to water, fungus, rodent and termite attack.
33	Packing Details		Cables shall be supplied in Non-returnable wooden drums of heavy construction. The surface of the drum and the outer most cable layer shall be covered with waterproof cover. Both the ends of the cables shall be properly sealed with heat shrinkable PVC/Rubber caps secured by 'U' nails so as to eliminate ingress of water during transportation, storage and erection. Wood preservative anti-termite treatment shall be applied to the entire drum. Wooden drums shall comply with IS-10418. Each drum shall carry Manufacturer's name or trademark, Type of cable, Voltage grade, Year of manufacture, Type of insulation, Number of pairs & size of conductor, Cable code, Length of cable on drum, Drum number/Total number of drums (for the respective variety), Approximate gross mass. A tag containing same information shall be attached to the both ends of the cable. An arrow and suitable accompanying wording shall be marked on one end of the reel indicating the direction of rotation in which it should be rolled.

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

TYPICAL CONSTRUCTIONAL DIAGRAM OF 3 CORE PTFE INSULATED & SHEATHED CABLE



SITE CONDITIONS :- Atmosphere	Dusty, Salty, corrosive & Heavily polluted.
Guarantee	A Guarantee Certificate for 18 months of trouble-free operation/performance from the date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished.
General	All the parameters shall comply with the applicable standards, wherever applicable.
Confirmation to be given by the vendor.	1. Sub-Delivery Enquiry Deviation format filled with “No Deviation”, indicating the Data sheet and Quality Plan reference and shall be furnished along with the offer. 2. Technical deviation/non-conformance indicated elsewhere in the offer will not be considered. 3. In the absence of Sub-Delivery Enquiry Deviation format, the vendor’s offer will not be evaluated.

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

TOLERANCE ON OUTER DIAMETER

Definition:-

This is the allowable Limits on the diameter of the actual cable from the Data sheet value /Design value.

The Data sheet indicates ± 2 mm. This means that if the Data sheet value / Design value of the cable diameter is 'X' mm, then all the actual cable diameter measured over the entire length / quantity shall fall within the Upper Limit 'X + 2' mm and the Lower Limit 'X - 2' mm. However, the following clauses must also be satisfied.

Example:-

Let the Data sheet value / Design value of the cable diameter be 14 mm (X)

Then, the measurements of the actual cable diameter taken over the entire length shall fall between the Limits 16 mm and 12 mm.

i.e. (X + 2) (X - 2)

TOLERANCE ON OUTER DIAMETER FOR THE ENTIRE LENGTH

Definition:-

This is the maximum allowable difference between the Highest actual cable diameter and the Lowest actual cable diameter measured over a drum length.

The Data sheet indicates 1 mm. This means that if the Highest actual cable diameter is say, 'D1' mm, and the Lowest actual cable diameter is 'D2' mm, then, 'D1 - D2' shall be maximum 1 mm and 'D1' and 'D2' shall also fall within the Upper and Lower limits as above.

Example:-

Let the Highest actual cable diameter measured be 16 mm (D1)

Let the Lowest actual cable diameter measured be 15 mm (D2)

Then, Tolerance for the entire length = 16 mm - 15 mm = 1 mm
(D1) (D2)

Comment:-

As the Highest actual cable diameter and Lowest actual cable diameter falls within the Upper and Lower Limits as above, and the difference between them is 1 mm maximum, the diameter values are acceptable.

Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

OVALITY

Definition:-

This is the maximum allowable difference between the measurements of the actual cable diameter in 'x' and 'y' directions in any particular section.

The Data sheet indicates 1 mm. This means that if the actual cable diameters measured are say, 'D3' mm, and 'D4' mm, in 'x' and 'y' directions respectively in one particular section. Then, the difference between 'D3' and 'D4' shall be maximum 1 mm. Also 'D3' and 'D4' shall fall within the Upper and Lower limits as above.

Example:-

Let the actual cable diameter in 'x' direction in one section be 16 mm (D3)

Let the actual cable diameter in 'y' direction in the same section be 15 mm (D4)

Then, Ovality
$$= \frac{16 \text{ mm} - 15 \text{ mm}}{(D3) \quad (D4)} = 1 \text{ mm}$$

Comment:-

As the actual cable diameters measured in 'x' and 'y' directions of the same section falls within the Upper and Lower limits as above, and the difference between them is 1 mm maximum, the diameter values are acceptable.

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Technical Data sheet for PTFE Insulated & Sheathed, Multicore Control Cable

Data sheet No.: DS:TCI:245/PTFE CONTROL CABLE, Rev. 00

Annexure
(To be filled-in by the Manufacturer)

Type of cable / No. of Core			2 Core x 1.5	3 Core x 1.5	4 Core x 1.5	2 Core x 2.5	3 Core x 2.5	4 Core x 2.5
1	Dia. over Conductor	mm						
2	Thickness of Insulation	mm						
3	Dia. over insulated conductor	mm						
4	Dia. under Inner Sheath	mm						
5	Thickness of Inner Sheath (Minimum)	mm						
6	Dia. over Inner Sheath	mm						
7	Dia. over Braiding	mm						
8	Thickness of outer Sheath (Minimum)	mm						
9	Overall Diameter	mm						
10	Weight of cable	kg/km						



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CONTROLS AND INSTRUMENTATION/FB

DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

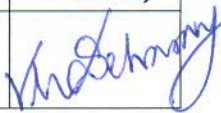
(PAIR SHIELDED AND OVER ALL SHIELDED)

&

(OVER ALL SHIELDED)

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Revision History

Rev. No.	Date	Description	Prepared	Reviewed	Approved
			Blessing Jany Churchil J	Blessing Jany Churchil J	V M Selvaraaj
00	01-08-17	Initial Release			

DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
1	Application		From Field Instruments in Hot Zones to Field Junction Boxes - FSSS, SADC, SBC & APH system field interconnection
2	Site Condition		Dusty, Salty, corrosive & Heavily polluted.
3	Applicable Standards		JSS 51038, JSS 51034, MIL-W-16878, IS-8130, VDE 207-P6, VDE-0815, VDE-0472, IEC 60332-3, ASTM-D-2116, IS-3975, IEC-754, ASTM-D-2843, ASTM-D-2863, IS-10810, IEEE-383, SS-4241475 & IS-10418
4	Voltage grade	V	1000
5	Temperature Rating	⁰ C	260
6	Construction of cable		As per Constructional diagram enclosed with this Data sheet
7	Conductor:-		
a	No. of Pairs		2 Pair / 4 Pair / 8 Pair As per Purchase Enquiry / Purchase order
b	Area of Conductor	Sq.mm	0.5 Sq.mm / 1.5 Sq.mm As per Purchase Enquiry / Purchase order
c	No. of Strands / Strand Dia. (for finished cable)	No./ mm	7/0.307 for 0.5 sq.mm & 23/0.3 for 1.5 Sq.mm (Stranded & Non-compacted)
d	Material		Silver plated Annealed Copper
e	Grade / Standard		High Conductivity, Electrolytic grade copper conforming to IS-8130 & Silver plating conforming to JSS-51034
8	Insulation :-		
a	Material		PTFE
b	Type and Standard		VDE 207 Part-6/ASTM D 2116
c	Thickness (minimum) as per JSS-51038	mm	0.3
d	Method of application		PTFE wrapped and sintered / PTFE extruded
e	Pair Identification		As per Data sheet Clause No. 36
f	Volume Resistivity	Ω cm	$> 10^{14}$
9	Lay for Pairing	mm	50
10	Direction of Lay		Right hand
11	No. of Pairs for making a bundle		4 pairs - lapped to form a bundle (Not applicable for 2 pair cable)

DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
12	Lay for laid-up Pairs	Twist/ metre	4 - 6
13	Lay for Laid-up Bundle	Twist/ metre	2 - 3 (Not applicable for 2 & 4 pair cable)
14	Binding material :-		
a	Type of Material		PTFE Tape
b	Thickness (min)	mm	0.028
c	Coverage (min)	%	100
d	Overlap (min)	%	25
e	Coloured PTFE tape		For 8 pair cables, each bundle(4 pair) shall be provided with coloured PTFE tape
15	Fillers (wherever applicable)		Flame retardant, Non-Hygroscopic, suitable for the operating temperature of the cable. Position, Shape and Number of fillers will be decided by the vendor Applicability of Fillers will be decided by the vendor for all the varieties of cables.
16	Shielding :-		
a	Type of Material		Aluminium Backed Mylar Tape
b	Thickness (min)	micron	For Pair Shielding 28 Micron, For Overall Shielding 60 Microns
c	Coverage (min)	%	100
d	Overlap (min)	%	25
e	General	The Aluminium mylar tape shall be provided in such a way that the aluminium side of the tape shall get in contact with the drain wire for all varieties of cables (both Pair shielding and over all shielding).	
17	Drain wire for shielding :-		
a	Material		Silver plated Annealed Copper
b	No. of strands / Dia. of strand	No./ mm	7/0.3
c	Area of cross section	sq.mm	0.5
e	Grade / Standard		High Conductivity, Electrolytic grade copper conforming to IS-8130 & Silver plating conforming to JSS-51034

DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement
18	Rip Cord		Non-metallic Rip cord shall be provided under inner sheath
19	Inner Sheath :-		
a	Material		PTFE
b	Type and Standard		VDE 207 Part-6/ASTM D 2116
c	Thickness (minimum)	mm	0.3
d	Method of application		PTFE wrapped and sintered / PTFE extruded
e	Colour		BLACK
20	Braiding :-		
a	Material		Nickel Plated Copper Alloy (High Strength)
b	Strand diameter		As per JSS – 51038
c	Braid Angle		As per JSS – 51038
d	Position		Over Inner Sheath
e	Coverage	% 85	85 - 90
21	Outer Sheath :-		
a	Material		PTFE
b	Type and Standard		VDE 207 Part-6/ASTM D 2116
c	Method of application		PTFE wrapped and sintered / PTFE extruded
d	Thickness (Nominal)		0.5
e	Colour		As per Purchase Enquiry
22	Cable Marking on Outer sheath by non-erasable printing		“Manufacturer’s name, Year of manufacture, Insulation material (PTFE), No. of pairs & Conductor size, Voltage rating, Type of Cable” @ 1 metre interval.
23	Sequential marking on Outer sheath by non-erasable printing		Every 1 Metre for Progressive Length by non-erasable printing.
24	Tolerance on Outer diameter	mm	± 2
25	Tolerance on Outer diameter for the entire length	mm	1
26	Ovality	mm	1

DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Sl. No.	Parameter		Value/Requirement	
27	Bending Radius (min)		12 times the Outer diameter	
28	Standard Packing Length	metre	1000	
29	Tolerance on standard packing length	%	± 5	
30	Tolerance on Overall quantity	%	+ 0 / - 2	
31	Non-standard Length		Last length shall be supplied in single length	
32	Electrical Parameters :-		0.5 sq.mm. Cable	1.5 sq.mm. Cable
a	Conductor DC Resistance (max.) @ 20° C as per BS-60228	Ω/km	36.7	12.2
b	Characteristic impedance @ 1 Khz	Ω	320 Ω for Pair shielded and Overall shielded cables	
			340 Ω for Overall shielded cables	
c	Insulation Resistance (min.) @ 20°C	MΩ/km	100	
d	Mutual Capacitance (max.) @ 0.8 KHz	nF/km	120 nF/km for Pair shielded and Overall shielded cables	
			100 nF/km for Overall shielded cables	
e	Attenuation (max.) @ 1 KHz	dB/ Km	1.2	
f	Cross talk (min.) @ 0.8 KHz	dB/km	60	
g	Test Voltage - Between Conductor- Conductor	KV/ minute	2	
h	Test Voltage - Between Conductor - Shield (min.)	KV/ minute	2	
33	FRLS Properties for Inner & Outer Sheath :-			
a	Oxygen Index @ ambient temp. As per ASTM-D-2863	%	Not Less than 29	
b	Temperature Index @ oxygen index 21 As per ASTM-D-2863	° C	Not Less than 250	
c	Smoke density rating As per ASTM-D-2843	%	Shall not be more than 60	
d	Acid gas generation As per IEC 60754-Part 1	%	Shall not be more than 20% by weight	
e	Flammability Tests As per IEC-60332-1-2		Shall pass	

**DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED
INSTRUMENTATION CABLE**

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

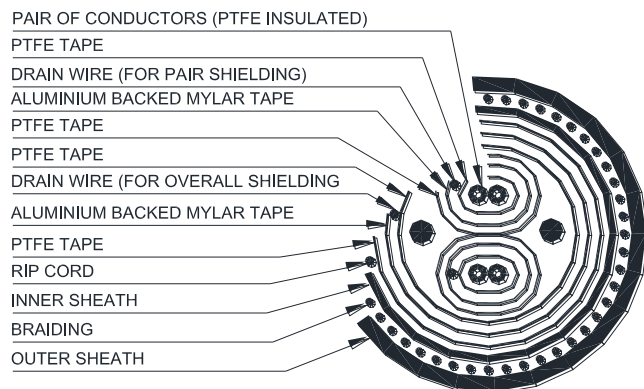
Sl. No.	Parameter	Value/Requirement										
34	Special Properties for Outer sheath	Outer sheath will be resistance to water, fungus, rodent and termite attack.										
35	Packing Details	Cables shall be supplied in Non-returnable wooden drums of heavy construction. The surface of the drum and the outer most cable layer shall be covered with waterproof cover. Both the ends of the cables shall be properly sealed with heat shrinkable PVC/Rubber caps secured by 'U' nails so as to eliminate ingress of water during transportation, storage and erection. Wood preservative anti-termite treatment shall be applied to the entire drum. Wooden drums shall comply with IS-10418. Each drum shall carry Manufacturer's name or trademark, Type of cable, Voltage grade, Year of manufacture, Type of insulation, Number of pairs & size of conductor, Cable code, Length of cable on drum, Drum number/Total number of drums (for the respective variety), Approximate gross mass. A tag containing same information shall be attached to the both ends of the cable. An arrow and suitable accompanying wording shall be marked on one end of the reel indicating the direction of rotation in which it should be rolled.										
36	<u>Colour coding and Numerical order of cores</u> The twisted pair of conductors are identified by 8 colours. The same colours are repeated in different Bundles. <table><tr><td>Pair</td><td>Colour</td></tr><tr><td>1</td><td>Blue & Red</td></tr><tr><td>2</td><td>Grey & Yellow</td></tr><tr><td>3</td><td>Green & Brown</td></tr><tr><td>4</td><td>White & Black</td></tr></table> For 8 pair cable, each bundle shall be provided with distinct coloured PTFE binder tape 1st bundle – Blue coloured PTFE binder tape 2nd bundle – Red coloured PTFE binder tape		Pair	Colour	1	Blue & Red	2	Grey & Yellow	3	Green & Brown	4	White & Black
Pair	Colour											
1	Blue & Red											
2	Grey & Yellow											
3	Green & Brown											
4	White & Black											

DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

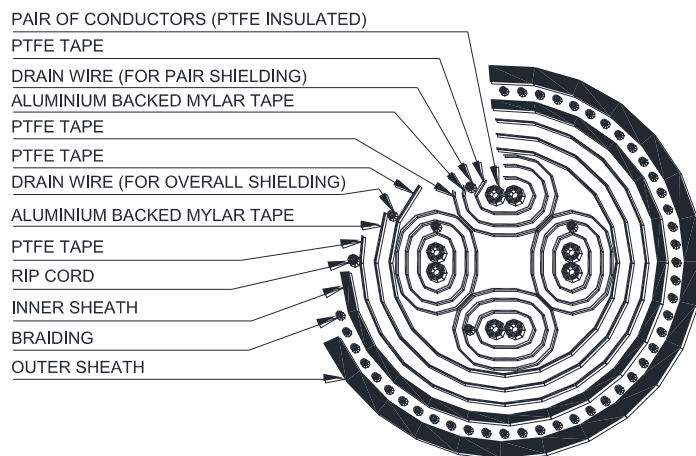
Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Constructional Diagram for Pair Shielded and Overall Shielded Cables

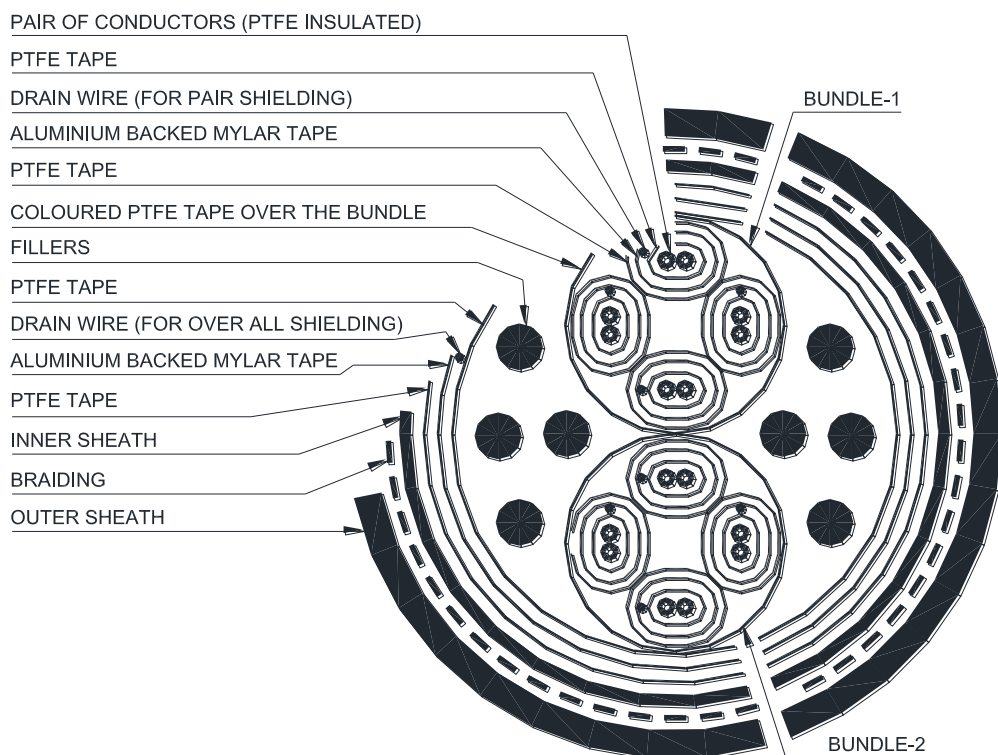
TYPICAL CONSTRUCTIONAL DIAGRAM OF A
2 PAIR, PAIR SHIELDED & OVER ALL SHIELDED CABLE



TYPICAL CONSTRUCTIONAL DIAGRAM OF A
4 PAIR, PAIR SHIELDED & OVER ALL SHIELDED CABLE



TYPICAL CONSTRUCTIONAL DIAGRAM
OF A 8 PAIR, PAIR SHIELDED & OVER ALL SHIELDED CABLE

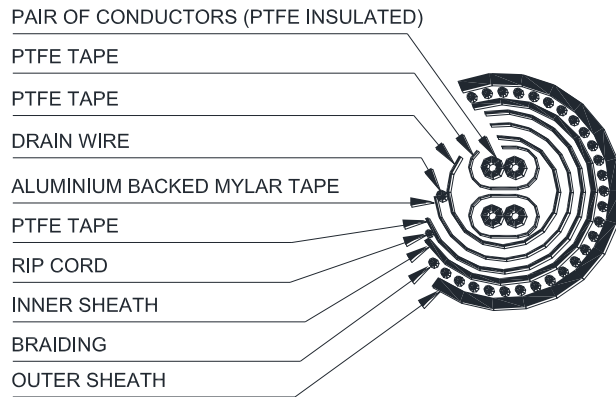


DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED INSTRUMENTATION CABLE

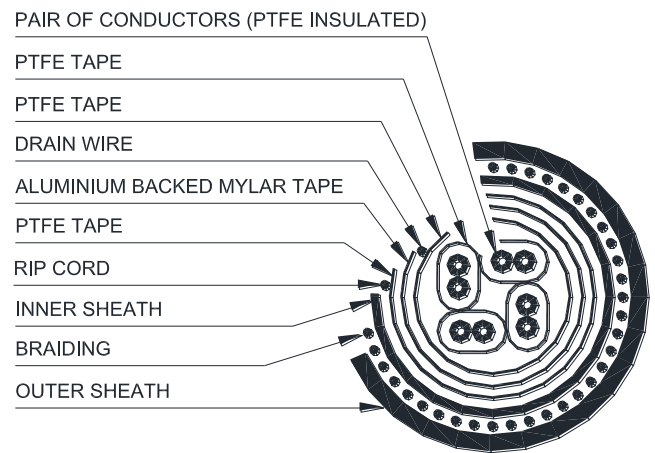
Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

Constructional Diagram for Overall Shielded Cables

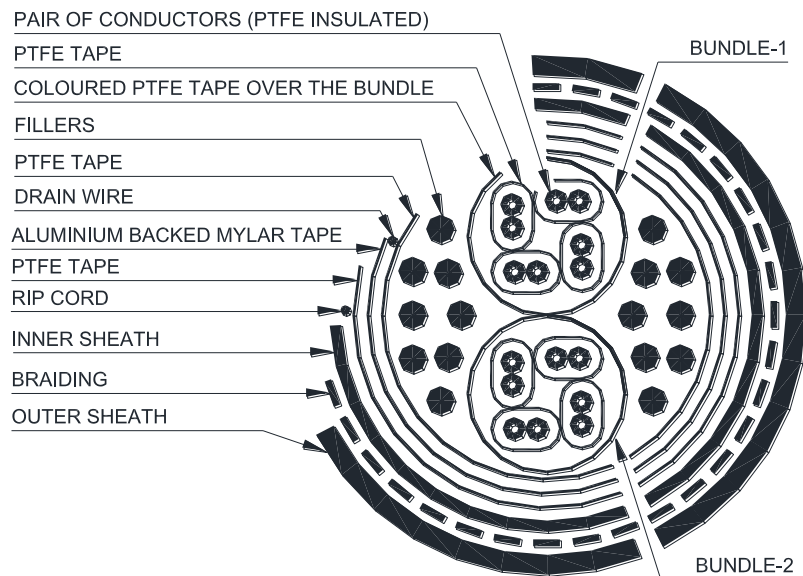
TYPICAL CONSTRUCTIONAL DIAGRAM OF A
2 PAIR OVER ALL SHIELDED CABLE



TYPICAL CONSTRUCTIONAL DIAGRAM OF A
4 PAIR OVER ALL SHIELDED CABLE



CONSTRUCTIONAL DIAGRAM OF A
8 PAIR OVER ALL SHIELDED CABLE



SPECIAL INSTRUCTION TO VENDOR	
Guarantee	A Guarantee Certificate for 18 months of trouble-free operation/performance from the date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished.
Confirmation to be given by the vendor.	1. Sub-Delivery Enquiry Deviation format filled with "No Deviation", indicating the Data sheet and Quality Plan reference and shall be furnished along with the offer. 2. Technical deviation/non-conformance indicated elsewhere in the offer will not be considered. 3. In the absence of Sub-Delivery Enquiry Deviation format, the vendor's offer will not be evaluated.

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**DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED
INSTRUMENTATION CABLE**

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

ANNEXURE TO INSTRUMENTATION CABLE DATA SHEET

Pair shielded & Over all shielded Cable

Type of cable / No. of Pair			2 Pair x 0.5 sq.mm.	4 Pair x 0.5 sq.mm.	8 Pair x 0.5 sq.mm.	2 Pair x 1.5 sq.mm.
1	Dia. over Conductor	mm				
2	Thickness of Insulation (minimum)	mm				
3	Dia. over insulated conductor	mm				
4	Dia. Over laid up pair	mm				
5	Dia. under Inner Sheath	mm				
6	Thickness of Inner Sheath (Minimum)	mm				
7	Dia. over Inner Sheath	mm				
8	Braiding – Strand diameter	mm				
9	Braid Angle					
10	Dia. over Braiding	mm				
11	Thickness of outer Sheath (Minimum)	mm				
12	Overall Diameter	mm				
13	Weight of cable	kg/ km				
14	Short circuit rating of Conductor for 1 second	KA				

SIGNATURE OF THE VENDOR WITH SEAL

**DATA SHEET FOR PTFE INSULATED & SHEATHED, MULTIPAIR SHIELDED
INSTRUMENTATION CABLE**

Data sheet No.: DS:TCI:145/PTFE INSTRUMENTATION CABLE, Rev. 00

ANNEXURE TO INSTRUMENTATION CABLE DATA SHEET

Over all shielded Cable

Type of cable / No. of Pair			2 Pair x 0.5 sq.mm.	4 Pair x 0.5 sq.mm.	8 Pair x 0.5 sq.mm.
1	Dia. over Conductor	mm			
2	Thickness of Insulation (minimum)	mm			
3	Dia. over insulated conductor	mm			
4	Dia. Over laid up pair	mm			
5	Dia. under Inner Sheath	mm			
6	Thickness of Inner Sheath (Minimum)	mm			
7	Dia. over Inner Sheath	mm			
8	Braiding – Strand diameter	mm			
9	Braid Angle				
10	Dia. over Braiding	mm			
11	Thickness of outer Sheath (Minimum)	mm			
12	Overall Diameter	mm			
13	Weight of cable	kg/km			
14	Short circuit rating of Conductor for 1 second	KA			

SIGNATURE OF THE VENDOR WITH SEAL

Annexure – A - Terms and Conditions

ACCEPTANCE OF TECHNO - COMMERCIAL TERMS AND CONDITIONS BY THE BIDDERS

Description of the Equipment:		PTFE Inst and control Cable - 97PTS
BHEL Tender No. & Date		
Sl. No.	Terms and conditions	Vendor's confirmation
1	QUOTATIONS: Interested bidders / Suppliers shall submit their offer through e-Procurement mode at https://bheleps.buyjunction.in . Offers in any other mode will not be accepted. For Enterprise Procurement System (EPS) Bidders/Suppliers are requested to follow these steps.	
2	REQUIREMENTS 1. A PC with Internet connectivity. 2. DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION) 3. The site is best viewed in Internet Explorer 9.0. If you are using Internet Explorer 10 or above then enable compatibility view available under Tools menu 4. Install Java 1.8 Update 67/72/79/77 (32 OR 64 Bit)	
3	MANDATORY REQUIREMENT FOR EPS: Suppliers interested for registration for BHEL Open Tenders should have a valid DSC (Digital Signature Certificate) before Proceeding forward for Registration. Herein a Valid DSC refers to an Active and unexpired Signing and Encryption Certificate, with specification Class III SHA 2 2048 bit.	
4	UNREGISTERED SUPPLIER IN EPS: Procedure for Online Registration in EPS for Open Tender Suppliers for BHEL Please follow the below steps for registration 1. Click Register Button (Top of the Screen) 2. Please input your organization PAN No (in case of Indian supplier) or click "Foreign" in case you are an overseas Supplier. 3. Click on INTERESTED Button against the respective BHEL Unit 4. Key in your desired login id (Login Code should be 8 - 24 characters in length and can only use numeric values) If you have registered by keying in PAN No. then your desired login id will be prefixed by "OTI", In case of overseas suppliers it will be prefixed with "OTF" 5. Fill in the other details. 6. Fill in the Captcha code and click next 7. Register your Signing certificate and click next 8. Select atleast one procurement category you may be dealing in. Once the above steps are completed, your profile will be activated by mjunction within 2 business hours. After registering follow the steps provided in "For Registered Supplier" to view RFQ. In case of any assistance, please call the following nos for support: 033-6601 1717 (From 9:30am to 5:30pm) NB:- 1 -- BHEL Administrator or user will have no role for approving Registration and Open Tenders and DSC for Any supplier who has registered himself from the front END which is in case of OT.	

5	FOR REGISTERED SUPPLIER IN EPS: - Supplier visits EPS home page - Supplier signs in with their user id and password - Selects the RFQ Code and views it. - Attaches themselves to the RFQ by clicking the interested button - Supplier fills the bid template and makes necessary attachments - Supplier submits their bid by clicking CONFIRM. In case of any assistance, please call the following Nos for support: 033-6601 1717 (From 9:30am to 5:30pm)
6	Bidders are requested to quote their offer price on F.O.R Destination (respective project Site) basis only (The basic price of the material quoted in the bid should be inclusive of Packing, Forwarding and Freight). Ex-works offers will be summarily rejected without further clarification.
7	No charges shall be indicated as “Lumpsum” or “Approximate” in absolute value. All charges like taxes and duties should be clearly specified as “percentage” of the quoted rates.
8	If any sales tax is payable as extra to the quoted price should be specifically stated in quotations along with CST & TIN no failing which the purchaser will not be liable for payment of sales tax. Our TIN No. 33243560005 Dated. 01.01.2007, CST No.239383 Dtd.11.06.1991
9	Manufacturer’s name, trademark or patent no. if any should be specified. Illustrative leaflets giving technical particulars are required along with quotation wherever necessary
10	The Purchaser shall be under no obligation to accept the lowest or any other tender and shall be entitled to accept in Part or full without assigning any reason whatsoever
11	The bidder has to keep track of any changes by viewing the addendum / Corrigendum's Issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
12	The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the processes and steps. BHEL and mjunction Services Ltd. will not be responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Purchaser for processing.
13	Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.
14 (a)	Technical : Supply of PTFE Inst & control Cables shall be as per 1.Datasheet: DS:TCI:145/PTFE Instrumentation cable Rev. 00 2.Datasheet: DS:TCI:245/PTFE Control cable Rev. 00 3.. Vendor Quality Plan to be submitted along with the offer.
14 (b)	Enquiry as a package: 1. PTFE Inst & control cables for Ennore – 1, 2 will be treated as one package 2. PTFE Inst & control cables for North Chennai - 1 will be treated as one package 3. PTFE Inst & control cables for Uppur – 1, 2 will be treated as one package 4. PTFE Inst & control cables for MEIL Tuticorin will be treated as one package for evaluation and ordering

	Not quoting / getting technically or commercially disqualified for any item in the package will lead to disqualification for specific package of enquiry.	
14 (c)	Quantity Tolerance: Overall supply tolerance shall be +0 / -2% for each package. (maximum)	
15	Pre-Qualification Requirement (PQR) Compliance sheet shall be Filled, signed and attached. Offers which are not meeting PQR conditions will be rejected.	Signed and Attached / Not Attached
16	Inspection: Inspection by BHEL TPI - M/s. TUV (Southern and Western India) / M/s. BV (Eastern and Northern India) (Vendor has to give inspection call with minimum 14 days prior to inspection planned date)	Accepted / Not Accepted
17	Only manufactures are eligible to submit the offers. Offer from traders will not be considered and will be rejected.	Manufacturer / Trader / Agent
17 (b)	Are you a manufacturer?	Yes / No
18	Firm Price: The quoted / finalised rates shall be Firm till execution of the supplies. Offer with PVC clause will not be considered.	Accepted / Not Accepted
19 (a)	Delivery term (Indigenous) The quote shall be on FOR project destination basis as indicated below, inclusive of Packing & forwarding. Freight to your account. The materials shall be despatched to: Ennore Package – Ennore Site, Tamil Nadu North Chennai Package – North Chennai, Tamil Nadu Uppur Package – Uppur Site, Tamil Nadu MEIL Tuticorin Package – MEIL Tuticorin Site, Tamil Nadu	Accepted / Not Accepted

19(b)	Delivery term (Import) CFR Chennai port: The quote shall be on CFR Chennai Port basis with freight break up details and Place of delivery – INTVT6 – CONCOR ICD PORT OF LOADING SHOULD BE INDICATED WITHOUT FAIL. PORT OF DISCHARGE should be CHENNAI and PLACE OF DELIVERY – INTVT6 – CONCOR ICD	Accepted / Not Accepted
19 (c)	Tender will be Finalised based on FOR Destination basis	
20	Insurance	BHEL Scope
21 (a)	Payment terms (Indigenous): 100% direct payment after 45 days from the date of dispatch against site acknowledgement LR copy (original)	Accepted / Not Accepted
21 (b)	Payment terms (Imports): BHEL Payment term is 100% payment on CAD basis after 45 days from the date of receipt of documents, specified in PO, at BHEL bank. Respective bank charges to respective account.	
21 (c)	Loading Criteria (Indigenous) Payment Terms: Any deviation in the BHEL payment terms will attract loading as per below. “Base rate of SBI (As applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders”. Payment through bank is not acceptable. If still demanded by vendor, loading will be 5% on the offered material value. If the Payment term is 90% direct payment after 45 days from the date of dispatch against submission of dispatch documents and balance 10% against site acknowledgement. For this option a loading of 2% on the 90% of the offered materials value shall be made. LC will not be operated for Indigenous vendors. Offers with payment terms as LC from indigenous vendors will be rejected.	Accepted / Not Accepted
21 (d)	Loading Criteria (Imports) :	Accepted / Not Accepted

	Any deviation in the above payment term (as per 5(b)) will attract loading as mentioned below. “Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders. • In the case of Usance LCs the loading will be considered @ 1.5% on the offered Value. • For LC at sight the loading will be considered @ 3.5% on the offered Value. Normally CAD at sight and Confirmed LCs are liable for rejection.	
22 (a)	Liquidated damages: Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional LD at the rate of 0.5% of total Order value per week of the delay or part there of subject to a maximum of 10% of the total order value. Separate POs will be placed for each project.	Accepted / Not Accepted
22 (b)	Indigenous: LD will be calculated from the date of LR.	
22 (c)	Import: LD will be calculated from date of BL for CFR contracts.	
22 (d)	Loading Criteria LD / Penalty: Any deviation on BHEL LD / Penalty clause, loading (Basic material Value) will be applied to the extent to which it is not agreed by the bidder.	Accepted / Not Accepted
23 (a)	Guarantee / Warranty Period Guarantee clause 18 months from the date of supply or 12 months from the date of actual put in use, whichever is earlier.	
23 (b)	Loading Criteria: Guarantee / Warranty Period: No Deviation is permitted. If still vendor offered any deviation on the Guarantee / warranty period it may leads to rejection of offer.	Accepted / Not Accepted
24	Taxes & Duties: All Taxes, Duties, Service Taxes etc. payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties. Our TIN No. 33243560005, TNGST No. 3560005, CST. No. 239383 Dt. 11-06-1991 & BHEL ECC No. AAACB4146PXM012, Assessment circle Tiruverambur.	Accepted / Not Accepted

25	Risk purchase: If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHEL will be entitled to terminate the contract and to Purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or despatch within the delivery period mentioned in the Purchase Order.	Accepted / Not Accepted
26	Delivery Period: MEIL Tuticorin Package : Supply shall be 08 weeks from document approval. Ennore Package : Supply shall be 12 weeks from document approval. North Chennai Package : Supply shall be 12 weeks from document approval. Uppur Package : Supply shall be 16 weeks from document approval.	Accepted / Not Accepted
27	Validity: 120 days minimum from techno commercial bid opening.	Accepted / Not Accepted
28	MSE VENDOR: <i>i. If L1 vendor is an MSE vendor each project package will be ordered on L1 vendor.</i> <i>ii. If a Non MSE vendor is coming as L1, then L1 prices of each package will be counteroffered on MSE vendor who is quoting price within the price band L1+15% and if they are agreeing purchase order will be awarded for full/complete supply of total tendered value to MSE.</i> <i>iii. If more than one MSE vendors are available in the L1+15% price band then lowest of the MSE vendor will be selected for counteroffering. If lowest MSE vendor is not accepting it will be counteroffered to the next MSE vendor in the price band and so on.</i> <i>iv. Finally if none of the MSE vendor in the price band is accepting the counter offer, it will be ordered on L1 non MSE vendor.</i> MSE suppliers can avail the intended benefits only if they submit along with the offer, attested/notarized copies of either 1. EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or 2. Valid NSIC certificate or EM II certificate along with original of CA certificate (Format enclosed) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limits as per the act for relevant status (MICRO or SMALL) where the deemed validity of EM II is	MSE Vendor / Non- MSE Vendor

	over. <i>Date to be reckoned for determining the deemed validity will be the last date of technical bid submission (Part 1 in case of two part bid).</i> Non submission of such documents will lead to consideration of their bid at par with other bidders and MSE status of such suppliers shall be shifted to NON MSE suppliers till the supplier submit this documents. Documents should be notarized or attested by a Gazetted officer. Definitions of MSEs owned by SC/ST is under: • <i>In case of proprietorship firm, proprietor must be SC/ST.</i> • <i>In case of partnership firm, the SC/ST partners must be holding at least 51% shares in the unit.</i> • <i>In case of private limited companies, at least 51% share must be held by SC/ST promoters.</i> Authorised Offices to Issue SC/ST certificate. The caste/Tribe/Community certificate issued by the following authorities in the prescribed form for SCs/STs can be considered. • District Magistrate / Additional District Magistrate / Collector / Deputy Commissioner / Additional Deputy Commissioner / Deputy Collector / 1st class stipendiary magistrate / Sub divisional Magistrate / Taulka Magistrate / Executive magistrate / Extra Assistant commissioner. • Chief Presidency magistrate / Additional chief presidency magistrate/Presidency magistrate. • Revenue Officer not below the rank of thasildar. • Sub-Divisional officer of the area where the individual and / or his family normally resides. <i>To avail the benefits of MSE under SC/ST category, the related documents as stated above should be submitted along with tender documents.</i>	
29 (a)	Please mention your GSTIN Number and HSN Code (For Indigenous Suppliers only)	
29 (b)	Applicable GST Rate (For Indigenous Suppliers only):	
30	Unregistered BHEL (Non-PMD) one time vendors for this item code 97PTS – PTFE Insulated instrumentation Cable may submit SRF (supplier registration format) for enlistment: (PMD – BHEL's Product Material Directory)	Accepted / Not Accepted

	BHEL policy accepts only equipment/product manufactures for registration in PMD. In case any manufactures refuses to deal directly with BHEL and provide the same in writing, they can avail the services of an agent/ distributor/ dealer/ trader etc., Then its agent/ stockist/ distributor/ dealer/ trader etc. can apply for registration to BHEL's PMD provided their OEM is applying for registration with BHEL. OEM supplier shall furnish a letter authorizing agent/distributor etc. so that agent/distributors application also can be processed. Applications from agent/distributor without the above will not be entertained. i. Supplier may submit the filled in supplier registration forms (SRF) available in the BHEL website - https://supplier.bhel.in/ and the other required documents called for in the SRF. ii. The same shall be scrutinized as per BHEL evaluation procedures. iii. The contact details of SDC are as below: Ms. Nalini Subramanian, SDC / MM, 4th Floor, Building 24, BHEL, Trichy – 620014 Ph. No.: 0431-2577301, 0431-2574215 nalini.s@bhel.in pramila@bhel.in Registered BHEL PMD vendors (for this item code 97PTS – PTFE insulated Instrumentation Cable) need not submit the SRF and this point no. 30 is not applicable. Submission of SRF is required for enlistment into BHEL's PMD and it is not a mandatory requirement for this enquiry. However, the same will be required for considering for future requirements	
31 (a)	Supporting Document attached for MSE	Attached / Not attached
31 (b)	Validity of CA expires on	
32	Document Submission: <u>Along with the offer:</u> 1. "Sub-delivery enquiry deviation format" as per below clause-34 to be furnished. 2. Filled in Commercial terms and conditions (this document) to be submitted. 3. Unpriced offer submitted through EPS shall contain minimum of above documents, without which offer will be summarily rejected. 4. Any query during enquiry stage shall be replied within three days failing which offer will be rejected as non-responsive.	Accepted / Not Accepted

	<u>After Purchase Order:</u> 1. Technical datasheets & QP endorsement to be submitted for BHEL review and sending to Customer approval within 10 days from the PO date. 2. If type tests has to be conducted by vendor as per specification/QP requirements, then the same has to be conducted (at NABL accredited facility, witnessed by BHEL inspection agency) and report to be submitted for BHEL review and customer approval within 4 weeks from the customer approval of datasheet. 3. Any comment in the documents by BHEL/Customer to be replied / revised (as applicable) within three days. 4. Any document submitted with deviations from enquiry/PO requirements will not be treated as document submission for LD calculation purposes.	
33	<u>GST (For Indigenous Suppliers):</u> 1. Response to Tenders for Indigenous supplier will be entertained only if the vendor has a valid GST registration no which should clearly mentioned in the offer. If any specific exemption is available, a declaration with due supporting documents need to be furnished for considering the offer. 2. Supplier shall mention their GSTN registration number in all their invoices and invoices shall be in the format as specified/prescribed under GST laws. Invoices shall necessarily contain Invoice number (in case of multiple numbering system is being followed for billing like SAP invoice no, commercial invoice no etc., then the Invoice No which is linked/uploaded in GSTN network shall be clearly indicated), item description as per PO, Quantity, Rate, Value, applicable taxes with nomenclature (like IGST, SGST, CGST & UTGST) separately, HSN/ SAC Code, etc. 3. All invoices shall bear the HSN Code for each item separately (Harmonized System of Nomenclature)/ SAC code (Services Accounting Code). 4. A declaration to the effect that all invoice particulars are/were uploaded in the GSTN network/ portal & all tax liability as per GST rules and regulations have been and will be discharged, shall be mentioned in the invoice. If not mentioned in the invoice, a separate declaration shall be submitted as per the requirement of BHEL. 5. All documents like Mill Test Certificate, LR copy, Guarantee/Warrantee certificate, work completion certificate, any other document mentioned in PO, shall be sent along with the vehicle/consignment. For all consignments received within the calendar month, input credit will be availed within that month in line with monthly returns filing cycle. In case	

	of any discrepancy in the document or non-submission of documents mentioned in the PO, then BHEL will not be able to accept or account the material, in such case availing of tax credit will be deferred to next month or so. 6. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the suppliers, within the calendar month notified by BHEL. 7. For any such delay in availing of tax credit for reasons attributable to supplier (as mentioned above), interest (calculated @ SBI Base Rate + 6%) along with penalty if any will be deducted for the delayed period i.e. from the month of receipt till the month tax credit is availed, from the running bills. 8. Under GST regime, BHEL has to discharge GST liability on LD recovered from suppliers/contractors. Hence applicable GST shall also be recoverable from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number. 9. Our GST No. 33AAACB4146P2ZL 10. Application reference no. (ARN) : AA3306170074586	
34	Any deviation on technical/QP/packing requirements shall specifically be indicated in the “sub-delivery enquiry deviation format” attached along with the enquiry. Deviations / clarifications declared elsewhere will not be evaluated. Also, any deviations from the commercial terms and conditions shall be clearly spelt out in this format itself. Deviations / clarifications declared elsewhere will not be evaluated. Deviations taken, if any, taken by vendor as per our requirement above shall be clearly got accepted by BHEL in writing during enquiry stage itself. Acceptance of priced bid opening / reverse auction without the above will be deemed as summary withdrawal of such unaccepted deviations, if any. In the event of an order no deviations, unless accepted clearly by BHEL in writing during enquiry stage itself will be entertained and all other techno-commercial requirements will be binding on successful bidder and failure to execute the terms will lead to disciplinary action by BHEL against the said bidder. Requirement as above will be binding on all suppliers who submits of comments/deviations on this clause will not be allowed. Deviations requirement will lead to rejection of offer itself.	Accepted / Not Accepted

35	Price shall be quoted for Tender specification (including all Annexures / documents). Price impact will not be allowed for the bidders after opening of technical bid within the validity period unless there is any change made by BHEL in the tender specification.	Accepted / Not Accepted
36	Price shall be quoted same for the same item in the enquiry, irrespective of destination which are to be delivered to different site and no difference in price for different project requirement (for the same item) to be quoted. In case two different prices are quoted, lower of the two prices will be considered for ordering in the event of vendor becomes L1, otherwise.	Accepted / Not Accepted
37	Reverse Auction: BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com). The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates. If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).	Accepted / Not Accepted

38	Suppliers involving in fraudulent practices or delayed supply (or) non-Supply will be dealt with provision as indicated in “Guidelines for Suspension of Business Dealings with Suppliers / Contractors” which is hosted in website www.bhel.com The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com. 1.0 Integrity commitment, performance of the contract and punitive action thereof: 1.1 Commitment by BHEL: BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in transparent and fair manner, and with equity. 1.2 Commitment by Bidder / Supplier / Contractor: 1.2.1. The bidder / supplier / contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India. 1.2.2. The bidder / supplier / contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issues from time to time by Govt. of India / BHEL. 1.2.3. The bidder / supplier / contractor will perform / execute the contract as per the contract terms & Conditions and will not default without any reasonable cause, which causes loss of business / money / reputation, to BHEL. If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on www.bhel.com and / or under applicable legal provisions.	Accepted / Not Accepted
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