


ESP-001-2A Rev.00		PRODUCT STANDARD PROJECT ENGINEERING & SYSTEM S DIVISION HYDERABAD		Std. / Doc. Number	
				PG-M RPL-DS-01	
				Rev. No.	00
		Sheet	1	of 1	


Pressure Gauge (PG) & PG-Oil filled Technical Data Sheet						
GENERAL	1	Range & Qty.	Skid vendor to decide			
	2	Type	Surface mount /Local Gauge			
	3	Ambient Temp Limit	0 to 65°C			
	4					
GAUGE	5	Sensor Type	C-Type Bourdon (≤ 40 Kg/cm2(g)) Helical Bourdon (> 40Kg/cm2(g))			
	6	Dial Size	50MM (for gauges concontrol valve), 250MM (for Drum pressure)& 150MM (for all other applications)			
	7	Accuracy	±1% of URV			
	8	Process Connection	1/2" NPT (M), Bottom entry.			
	9	Blow out Disc	Required.			
	10	Solid Front Case	Required for all gauges			
	11	Over Range Protection	> 130% of full scale.			
	12	Protection	IP 65			
	13	Zero & Span adjustment	External Required.			
	14	Anti-corrosive Dial	Non-Rusting Plastic, White background with black lettering & shall confirm to IS-3624			
	15	Micro meter Adjustment	Required for pointers.			
	16	Scale type	Concentric, Graduated units			
	17	Pointer-270° Deflection	Yes, Metal with Black Finish			
	18	Pointer Stop	Required at both end			
	19	Bezel ring	Bayonet Lock Type			
	20	Movement	Geared / Cam-roller type			
	21	Oil filled	For pump discharge lines and vibrating applications			
	22	Other requirements	Accessories shall be supplied in the installed & pressure-set (gauge saver) condition on the gauge to avoid mismatches at site.			
	23					
	MATERIAL	24	Case Material	SS304		
		25	Element Material	SS316 (minimum)		
		26	Window Glass	3mm thick Shatter Proof glass		
27		Pointer	Alluminium.			
28		Blow out Disc	SS304			
29		Tag Plate	Required, SS304			
30		Bezel ring	SS316 (minimum)			
31		Movement	Hardened SS			
32		Socket Material	SS316 (minimum)			
33		Tip material	SS316 (minimum)			
ACCESSORIES		34	Pulsation Damper (SS316)	Required for services involving rapidly varying pressures		
		35				
		36	Tag Plate	Required, 1 No per Gauge, SS304		
		37	Gauge Saver (SS316)	Required wherever maximum range is less than design pressure		
TEST REPORT/ CERTIFICATE		38	2 way manifold	Part of pre-fab hookup;		
	39	Bill of Material (model, dim., Tag no's)	100% Witness			
	40	Spares (BOM, part no's)	100% Witness (if ordered)			
	41	Material compliance certificate	100% Review			
	42	Calibration	10% witness or min. 2 of each range			
	43	Over Protection Test for 30 min.	10% witness or min. 2 of each range			
	44	Accuracy Test	10% witness or min. 2 of each range			
	45	Vibration test	100% Review			
	46	Ingress Protection Test	100% Review			
	47	PMI Test (for SS & AS Materials)	100% Review			

NOTES::

- This data sheet shall be used for inspection along with BOM sheet and Tag List. No further approval is required after P.O. placement
- Tag list shall be furnished by BHEL after P.O. placement
- Vendor shall submit the consolidated BOM sheet along with accessories of instruments, finalised make / models of instruments, etc for approval.
- Vendor shall not submit any data sheet for approval after P.O. placement.
- GA drawings shall be submitted for approval (if applicable)
- The dial of all gauges shall have yellow, green and red bands to indicate respectively, the lower, middle and upper one-thirds of the calibrated range. This requirement shall be revisited during detailed engineering.

REMARKS:

- The elastic element material shall be as follows:
 - For range ≤ 60 Kg/cm2 - AISI-316 seamless drawn stainless steel tube, argon arc welded at AISI-316 forged or wrought stain less steel tube anchorage and tube end piece.
 - For range > 60 Kg/cm2 - AISI-316 bored stainless steel.

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Remote seal - Pressure Gauge (PGD) Technical Data Sheet					
GENERAL	1	Range & Qty.	As per enquiry and Material code		
	2	Type / Std	Diaphragm Sealed / IS3624		
	3	Ambient Temp Limit	0 to 65°C		
	4				
GAUGE	5	Sensing Element	Diaphragm, SS 316		
	6	Dial Size	150MM (6")		
	7	Accuracy	±1% of full scale deflection		
	8	Process Connection	As per enquiry and Material code		
	9	Instrument connection	1/2" NPT(M)		
	10	Blow out Disc	Required.		
	11	Over Range Protection	> 130% of full scale.		
	12	Protection	IP 65		
	13	Zero & Span adjustment	External Required.		
	14	Anti-corrossive Dial	Non-Rusting Plastic, White background with black lettering & shall confirm to IS-3624		
	15	Micro meter Adjustment	Required for pointers.		
	16	Scale type	Concentric, Graduated units		
	17	Pointer-270° Deflection	Yes,Metal with Black Finish		
	18	Pointer Stop	Required at both end		
	19	Bezel ring	Bayonet Lock Type		
	20	Movement	Geared / Cam-roller type		
	21	Fill fluid	Silicon		
	22				
	23				
	24				
	25				
MATERIAL	26	Case Material	SS304		
	27	Element Material	SS316		
	28	Window Glass	3mm thick Shatter Proof glass		
	29	Pointer	Alluminium.		
	30	Blow out Disc	SS 304		
	31	Tag Plate	Reqd, SS304		
	32	Bezel ring	SS316 (minimum)		
	33	Movement	Hardened SS		
ACCESSORIES	34	Socket Material	SS316 (minimum)		
	35	Tip material	SS316 (minimum)		
	36	Flange	SS316		
	37	Tag Plate	Required, 1 No per Gauge, SS304		
	38	Spacer Ring	Required, SS		
	39	Vent+Drain plugs	Required, SS, In built to Spacer		
	40	Armoured Capillary	Reqd. 3 Mts, SS316L with PVC Coat		
	41	Stud Nuts+Bolts	Reqd. A194Gr2H+A193GrB7 (Min 120mm long)		
TEST REPORT / CERTIFICATE	42	Gasket	Reqd. Spriral Wound, SS		
	43	Bill of Material (model, dim., Tag no's)	100% Witness		
	44	Spares (BOM, part no's)	100% Witness (if ordered)		
	45	Material compliance certificate	100% Review		
	46	Calibration	10% witness or min. 2 of each range		
	47	Over Protection Test for 30 min.	10% witness or min. 2 of each range		
	48	Accuracy Test	10% witness or min. 2 of each range		
	49	Vibration test	100% Review		
	50	Ingress Protection Test	100% Review		
	51	PMI Test (for SS & AS Materials)	100% Review		

NOTES::

- 1 This data sheet shall be used for inspection along with BOM sheet and Tag List. No further approval is required after P.O. placement
- 2 Tag list shall be furnished by BHEL after P.O. placement
- 3 Vendor shall submit the consolidated BOM sheet along with accessories of instruments, finalised make / models of instruments, etc for approval.
- 4 Vendor shall not submit any data sheet for approval after P.O. placement.
- 5 GA drawings shall be submitted for approval (if applicable)
- 6 The dial of all gauges shall have yellow, green and red bands to indicate respectively, the lower, middle and upper one-thirds of the calibrated range. This requirement shall be revisited during detailed engineering.

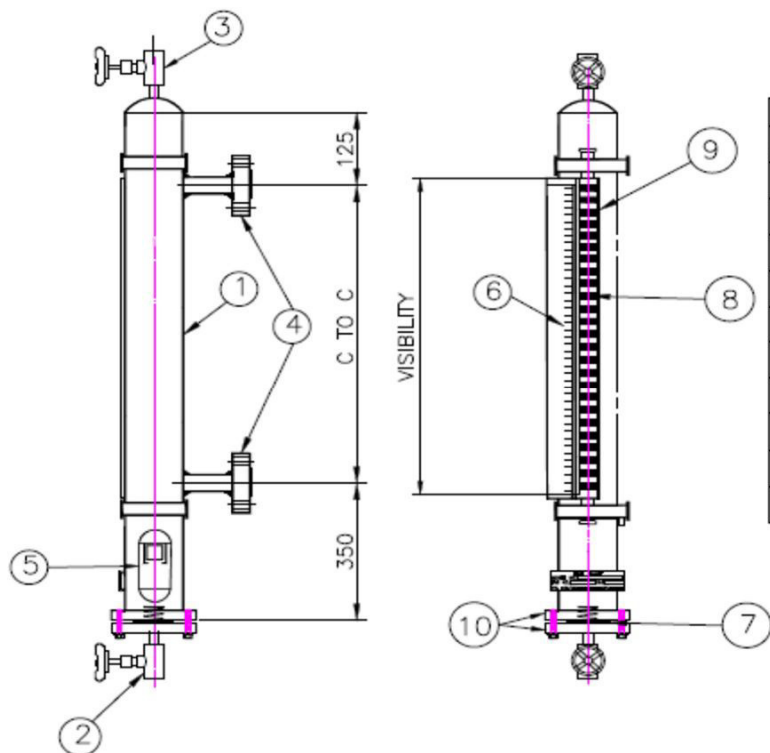
REMARKS:

- (1) The elastic element material shall be as follows:
 - (a) For range ≤ 60 Kg/cm² - AISI-316 seamless drawn stainless steel tube, argon arc welded at AISI-316 forged or wrought stain less steel tube anchorage and tube end piece.
 - (b) For range > 60 Kg/cm² - AISI-316 bored stainless steel.

 HYDERABAD			PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION HYDERABAD			Doc No:LT(G-R)-M RPL-DS-01 REV. 00			
Radar (Guided Wave Type) Level Transmitter (LT) Technical Data Sheet									
GENERAL	1	Range & Qty.	As per skids			ACCESSORIES	26	Mounting Bracket	For 2" pipe mounting, SS304
	2	Transmitter Type	Guided wave, HART, Ex-proof & intrinsic safe EX'i" type.				27	U Clamp+Fastner	Reqd, SS304
	3	Principle of Sensor	Vendor Std.(Pulse/Freq)				28	Cable Glands	2 No's SS316 Double Compression+Flameproof
	4	Ambient Temp Limit	- 40 to 80°C				29	Cable entry Plugs	Reqd, SS316 (1 No)
	5	Measuring Media	As per skids				30	Tag Plate	Reqd, SS304 (1 No)
SENSOR	6	Type of Detector	Vendor to select.			TEST REPORT/ CERTIFICATE	31	Bolts + Nuts	Reqd. A193GrB7 + A194Gr2H
	7	Max Press / Temp	As per skids				32	Gasket	SS316, Spiral wound type.
TRANSMITTER							33	FRP canopy	1 No per transmitter
	8	Accuracy	± 3mm (OR) better				34	5-Point Calibration	100% Review
	9	Process Connection	Vendor to select.; Flange rating shall be 300#RF minimum				35	Material compliance	100% Review
	10	Electrical Connection	2 Nos of 1/2" NPT (F)				36	Functional Test	100% Review
	11	Power Supply	24V DC, Loop Powered, 2 wire				37	Performance Test	100% Review
	12	Mounting	On closed chamber				38	Ingress Prot. Test	100% Review
	13	Protection	IP 65				39	Intrinsic Safety Test	100% Review
	14	Lighting and surge Protection	Required				40	Conformity Test	100% Review
	15	Display	Integral LCD Digital (in Engg Units & in %)						
	16	Load Resistance	600Ω @ 24 VDC						
MATERIAL	17	Output	4-20mA + HART (or) Foundation Fieldbus [As per skid P&IDs]						
	18	Diagnostic Features	Required						
	19	Hazardous area class	Zone-1, IIA/IIB, T3.			PROJECT SPECIFIC	41	Certification	PESO
	20	Sensor Body	SS316				42	Statutory Approvals	For Transmitters+Glands+Plugs
	21	chamber body	same as tank material				43	Corrosive Protection	Required
	22	Humidity	0 - 100% RH				44	Surge protector	Required
	23	Sensor O-Ring	Glass-filled PTFE/ Teflon						
	24	Electronic Housing	Dual compartment : YES						
			MOC: copper free aluminium (or) SSwith epoxy coating;						
For offshore / near shore (Jetty) saliferous environment, SS316 electronic housing to be provided									
25	Flange	SS316							

DATA SHEET for LEVEL GAUGE (Magnetic Type)


GENERAL	1	Range & Qty.	Skid vendor to decide	ACCESSORIES	19	Vent & Drain needle valve	2 No's; MOC: SS316; Size : 1/2" NPT(F)
	2	Type	Field mounted, Weather proof to IP 65 (Figure-1)		20	Tag Plate	Required, SS316
	3	Ambient Temp Limit	0 to 50°C and 95% RH max; suitable for tropical climate, ambient of Ammonia & Sulphur; Copper and copper alloys shall be avoided for all the parts exposed to atmosphere.		21	Bolts + Nuts	Required. A193GrB7 + A194Gr2H
	4	Process Parameters	Max Temperature : 150 DegC Max Pressure: 40 Kg/cm2(g)		22		
	5	Service	Condensate+ gas (exact details of medium shall be furnished after PO placement)		23		
LEVEL GAUGE	6	Type	Magnetic type	TEST REPORT/ CERTIFICATE	24		
	7	Body material	SS316		25		
	8	Cover plate	Stainless Steel – SS316 (if applicable)		26		
	9	Glass	Toughened Borosilicate (Klinger/ Moxos/ Bont)		27	Bill of Material (model, dim., Ta	100% Witness
	10	Type of indication	Rolling magnet		28	Spares (BOM, part no's)	100% Witness (if ordered)
	11	Float	SS316		29	Material compliance certificate	100% Review
	12	Scale	SS304		30	Hydraulic test	100% Review
	13	Gasket	SP. WOUND SS316 + GRAFOIL		31	NACE Compliance	100% Review
	14	Indicating Tube	SS316		32	PMI test (SS & AS)	100% Review
	15	Shield	Mica brass guard rods/holders		33	Radiography for weld joints	100% Review
	16	Gauge Valves	Required at top & bottom of gauge with auto shutoff ball check arrangement		34	IBR in Form IIIC (if applicable)	100% Review
	17	Minimum Visible length	Shall be intimated after P.O. placement.		35	Ingress Protection Test	100% Review
	18	Hydraulic test pressure	1.5 times of Design pressure @ room temp		36		
					37		
					38		
					39		



BILL OF MATERIAL		
S.NO.	DESCRIPTION	MATERIAL
1	CHAMBER	S.S-316
2	DRAIN NEEDLE VALVE 1/2" NPT (F)	S.S-316
3	VENT NEEDLE VALVE 1/2" NPT (F)	S.S-316
4	PROCESS CONNECTION	S.S-316
5	FLOAT	TITANIUM
6	SCALE	S.S-304
7	GASKET	SP.WOUND SS316+GRAFOIL
8	FLAPPER (RED/WHITE)	S.S
9	INDICATING HOUSING	ALUMINIUM
10	BOTTOM FLANGE	S.S-316

Differential Pressure Gauge (DPG) Technical Data Sheet

GENERAL	1	Range & Qty.	Skid vendor to decide	ACCESSORIES	28	Mounting Bracket	Reqd, For 2" pipe mounting, SS304
	2	Type	Bottom entry, 2" Pipe mounting		29	U Clamp+Fastner	Reqd, SS304
	3	Ambient Temp Limit	0 to 65°C		30	Cable Glands	Not applicable
	4	Static Pressure	Skid vendor to decide		31	Cable entry Plugs	Not applicable
	5				32	Vent/Drain Plugs	Reqd, SS304 (1 No)
GAUGE	6	Sensing material	Diaphragm in SS316	TEST REPORT/ CERTIFICATE	33	Tag Plate	Reqd, SS304 (1 No)
		Dial Size	150MM (6")		34	Bolts + Nuts	Reqd. A193GrB7 + A194Gr2H
		Case & Bezel	SS304, Bayonet type bezel		35	FRP canopy	Not applicable
	7	Windows	Toughened Glass with rubber ring				
	8	Accuracy	±0.5% of full scale deflection or Better				
	9	Process Connection	1/2" NPT(F)		36	Bill of Material (model, d	100% Witness
	10	Blow out Disc	Required.		37	Spares (BOM, part no's)	100% Witness (if ordered)
	11	Over Range Protection	> 130% of full scale.		38	Material compliance cer	100% Review
	12	Ingress Protection	IP 65		39	Calibration	10% witness or min. 2 of each range
	13	Zero & Span adjustment	External Required.		40	Over Protection Test for	10% witness or min. 2 of each range
	14	Anti-corrosive Dial	Non-Rusting Plastic, White with black figure		41	Accuracy Test	10% witness or min. 2 of each range
	15	Micro meter Adjustment	Required for pointers.		42	Vibration test	100% Review
	16	Scale type	Concentric, Graduated units		43	Ingress Protection Test	100% Review
	17	Pointer-270° Deflection	Yes, Metal with Black Finish		44		
	18	Pointer Stop	Required at both end				
MATERIAL	19	Bezel ring	Bayonet Lock Type	PROJECT SPECIFIC	45	Certification	As per OEM recommendation
	20	Movement	Geared / Cam-roller type		46	Manifold Type	Part of Pre-fab hookup
	21	Hazardous area class	Zone-1, IIA/IIB, T3.		47	Statutory Approvals	Not applicable
	22	Case Material	SS304		48	Pre-fab Hookup Drg	Attached; Same to be followed for supply
	23	Element & Wetted parts	SS316		49		
	24	Windows	Shatter Proof.		50		
	25	Pointer	Aluminum.		51		
	26	Movement	Hardened SS				
	27	Socket Material	SS316				

 HYDERABAD			PRODUCT STANDARD PROJECT ENGINEERING & SYSTEM S DIVISION HYDERABAD			Doc. No:DPT-M RPL-DS-01 REV. 00			
Differential Pressure Transmitter (DPT) Technical Data Sheet									
GENERAL	1	Range & Qty.	Skid vendor to decide			ACCESSORIES	28	Mounting Bracket	Reqd, For 2" pipe mounting, SS304
	2	Type	Electronic Smart, Ex-proof & intrinsic safe EX "i" type				29	U Clamp+Fastner	Reqd, SS 304
	3	Principle of Sensor	Vendor Std.,				30	Cable Glands	2 No's SS316 Double Compression+Flameproof
	4	Ambient Temp Limit	- 40 to 80°C				31	Cable entry Plugs	Reqd, SS 316 (1 No)
	5	Process Temp. Limit	- 40 to 120°C				32	Vent/ Drain Plugs	Reqd, SS 304 (1 No)
SENSOR	6	Accuracy	For a rangeability of 1:10 a) Equal or Above 760 mmWC: ± 0.075 % b) Less than 760 mmWC: ± 0.15 %			33	Tag Plate	Reqd, SS 304 (1 No)	
	7	Response Time	As per OEM recommendation				34	Bolts + Nuts	Reqd. A193GrB7 + A194Gr2H
	8	Stability	As per OEM recommendation				35	FRP canopy	1 No per instrument
TRANSMITTER	9	Turn Down Ratio	As per OEM recommendation			TEST REPORT/ CERTIFICATE	36	5-Point Calibration	100% Review
	10	Process Connection	1/2" NPT (F)				37	Hydro test	100% Review
	11	Electrical Connection	2 Nos of 1/2" NPT (F)				38	Material compliance	100% Review
	12	Power Supply	24V DC, Loop Powered				39	Functional Test	100% Review
	13	Over Range Protection	> 130% of range.				40	Performance Test	100% Review
	14	Protection	IP 65				41	Ingress Prot. Test	100% Review
	15	Zero & Span adjustment	Required.				42	Intrinsic Safety Test	100% Review
	16	Display	Integral LCD Digital (in Engg Units & in %).				43	Conformity Test	100% Review
	17	Impulse Entry	As per OEM recommendation				44	Internal tests (like IR etc.	100% Review
	18	Load Resistance	600Ω @ 24 VDC						
	19	Output	4-20mA + HART (or) Foundation Fieldbus [As per skid P&IDs]						
	20	Diagnostic Features	Required.						
MATERIAL	21	Hazardous area class	Zone-1, IIA/ IIB, T3.			PROJECT SPECIFIC	45	Certification	As per OEM recommendation
	22	Body	SS316				46	Compartments	Dual
	23	Element	SS316				47	Manifold Type	Part of Pre-fab hookup
	24	Sensor O-Ring	Glass-filled PTFE/ Teflon				48	Statutory Approvals	PESO (For Instrumnet+Glands+Plugs)
	25	Electronic Housing	Dual compartment : YES				49	Sensor Type	Non-Inductive type.
			MOC: copper free aluminium (or) SS with epoxy coating;				50	Corrosive Protection	Required
			For offshore / near shore (Jetty) saliferous environment, SS316 electronic housing to be provided				51	Terminal Block type	Integral, Non-fly leads
	26	Sensor fill fluid	Silicon Oil				52	Pre-fab Hookup Drg	Attached; Same to be followed for supply
27	Humidity	0 - 100% RH			53	Surge protector	Required		

NOTES:

- 1 All integral parts of the transmitter shall be suitable for the differential over-range in either direction equal to the full rated pressure of the body with the opposite side vented to atmosphere without permanent distortion or calibration error. For vacuum service, the element shall have under-range protection to full vacuum.
- 2 The square root extraction for the differential pressure based flow measurement shall be carried out in DCS. Transmitter shall indicate both DP & flow values.



Datasheet for signal cable

Your Order No T709A01559 dated 25.1.2010

OUR WO NO. 8250

Proj : MRPL

TECHNICAL PARTICULARS (Data Sheet) / GTP

SIGNAL CABLE

Sr No.	Mat..code HY2858593051	Size	8 triad (Individual & Overall) NON IS
1	Make		UDEY PYRO
2	APPLICABLE STANDARD		Generally to BS 5308 Part 2
3	VOLTAGE GRADE	Volts	600 / 1100
4	NO. OF TRIADS	No.	8
5	CONDUCTOR		IS 8130 / 84
	a) Material		Annealed tinned copper E C grade
	b) Nom. Size	sq mm	1.5 sq mm
	c) No. / Dia. of Strands	Mm	7/0.53
6	INSULATION		IS 5831 / 84
	a) Material		Extruded Type C PVC, 85°C
	b) Nom. Thickness	Mm	0.8
	c) Colour		Black/Blue/Brown
	d) Identification		Number printing
7	Twists	per mtr	13 twists
8	SCREENING		
	a) Material		Aluminium Mylar Tape
	b) Nom. Thickness of tape	Mm	0.05
	c) Coverage	%	100% coverage & 25% overlap
	d) Drain 0.5 sq mm ATC	Mm	7/0.3
9	CABLE BUNDLING		
	a) Binding material		Mylar/polyester tape
	b) No. of twists	per mtr.	4 to 6
	c) Tape thickness	Mm	0.075
	d) Communication pair		
	i) Conductor material		Stranded annealed tinned copper
	ii) Size	sq mm	0.5
	iii) Insulation material		Type C HR PVC, 85°C
	iv) Insulation thickness	Mm	0.4 mm
	v) Colour code		Red/Green
10	SCREENING (OVERALL)		
	a) Material		Aluminium Mylar Tape
	b) Nom. Thickness of tape	Mm	0.075
	c) Coverage	%	100% coverage & 25% overlap
	d) Drain 0.5 sq mm ATC	Mm	7/0.3
11	INNER SHEATH (BEDDING)		IS 5831 / 84
	a) Material		Extruded FR PVC type ST2
	b) Nom. Thickness	Mm	0.3
	c) Dia over inner sheath		21.5
	d) Colour		Black
	e) Rip cord		Yes
12	ARMOUR		IS 3975 / 99
	a) Material		Galvanised steel strip
	b) Nom. Diameter of wire	Mm	4 x 0.8
	c) Dia over armour	Mm	23.5

अनुमोदित कूट / APPROVED CODE	
1. APPROVED	2. APPROVED MARKED FINAL DRGS. SHALL BE FURNISHED.
3. APPROVED AS MARKED	4. NOT APPROVED NEW DRGS. REQUIRED.
हस्ताक्षर / SIGNATURE	
अनुमोदक कर्ता / APPROVED BY	दि. / DATE 30/3/10
परियोजना / PROJECT MRPL	
THIS APPROVAL DOES NOT ABSOLVE THE VENDOR OF HIS RESPONSIBILITY FOR THE CORR-ECT DESIGN MANUFACTURE AND OPERATION OF THE EQUIPMENT.	



UDEY PYROCABLES PVT. LTD.

13	OUTER SHEATH		IS 5831 / 84
	a) Material		Extruded FR PVC type ST2
	b) Nom. Thickness	Mm	1.5
	c) Dia over outer sheath	Mm	26.5
	d) Colour		Black
14	Max. Conductor Resistance	Ω /Km	12.3 at 20°C
	Min. Insulation Resistance	M Ω /Km	100
	Max. Mutual Capacitance		
	Bet. Cores	μ F/KM	250
	Bet. Core to shield	μ F/KM	400
	Max. L/R Ratio	μ H/ Ω	40
	Max. Drain wire resistance	Ω /Km	30
	Cable length / drum	Mtrs	1000 \pm 5%
16	Net wt of cable	Kg/Km	1490
17	Type test, routine test, acceptance test		As per BHEL spec HY28593 Cl. No.4
18	Quantity	Mtrs	10000

बी. एच. ई. लि.
BHEL GENERAL
आनुमोदित कूट / APPROVED

1. APPROVED.
2. APPROVED AS MARKED FINAL DRUGS. SHALL BE FURNISHED.
3. APPROVED AS MARKED REVISED DRGS. REQUIRED.
4. NOT APPROVED NEW DRGS. REQUIRED.

अनुमोदन कर्ता
APPROVED BY

हस्ताक्षर / SIGNATURE
दि. / DATE 30/3/10
MRPL

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DATA SHEETS & GA DRAWING FOR

FIELD BUS CABLES

REF NO. :PO No. T7I0P00006

DATED: 03/09/2010

Cable Type	Qty(meters)	Site Identification No.
1P×16AWG	22000	39501015
2P×16AWG	82000	39501016

PROJECT: MRPL PH-III



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING DIVISION
HYDERABAD-502032, INDIA

LEONI

ICON Fieldbus Cable

Fieldbus Foundation H1

IEC 61158-2

Single-Pair, XLPE-Insulation, Overall Screen, Armour, PVC-Outer sheath
FB-v2X(St)Y(SR)Y-II Eco, armoured

90 °C / 300 V

Application

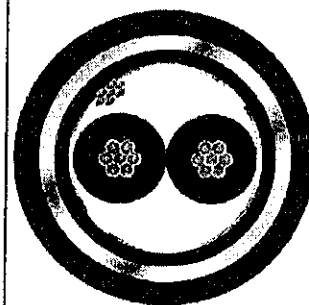
Fieldbus cable, Type A, for bus-systems Fieldbus Foundation acc. to IEC 61158-2. Suitable for use in hazardous classified locations class I and class II division 2 acc. to NEC 501-4(b) and NEC 502-4(b) or zone 1 and zone 2, group II, acc. to IEC 60079-14, resp.

Recommended for indoor and outdoor installation, in dry and wet locations, on racks, on trays, in conduits. Suitable for direct burial (please note the relevant legal/local installation requirement(s)).

Construction

Conductor stranded tinned copper, size: AWG 16/7
Insulation cross-linked polyethylene XLPE
Colour code (+)-core: brown, (-)-core: blue
Twisting cores with non hygroscopic filling elements* to cable core
Overall Screen plastic coated aluminium tape, in contact with stranded tinned copper drain wire
Bedding polyvinyl chloride PVC (Type ST2, IEC 60502-1), blue
Armour corrugated steel tape
Outer sheath polyvinyl chloride PVC (Type ST2, IEC 60502-1), blue for intrinsically safe systems
Marking LEONI KERPEN ICON FIELDBUS CABLE IEC 61158-2 100 Ω
(inkjet) FF H1 16/7 AWG 300 V 90 °C SUN RES
PRODUCTION LOT CODE LENGTH MARKING

(Example Sketch)



Technical Data

Flame propagation:	UL 13 vertical tray test IEC 60332-3-24 (cat. C)	Temperature range:	FB- Fieldbus Cable v tinned conductor 2X insulation of XLPE (St) overall screen Y bedding & outer sheath of PVC (St) corrugated steel tape -II reduced flame propagation
Oxygen index of inner & outer sheath:	(min. 30%) ASTM D 2863	Temperature range: -40 °C up to +90 °C (during operation) - 5 °C up to +50 °C (during installation) Min. bending radius: 10 x cable diameter	
Temperature index (TI):	(min. 250 °C) EN ISO 4589-3 (Annex A)		
Oil resistance:	ICEA S-73-532		
UV resistant			

Electrical data at 20 °C

	Character	Unit	Values
Conductor resistance (loop)	max.	Ω/km	29.8
Screen resistance	nom.	Ω/km	30
Mutual capacitance	nom.	nF/km	60
Inductance	nom.	mH/km	0.70
Capacitance unbalance to earth	max.	nF/km	4
Impedance at 31.25 kHz		Ω	100±20
Attenuation at 39 kHz	max.	dB/km	3.0
Propagation delay change (7.9 kHz – 39 kHz)	max.	µs/km	1.7
Test voltage U_{rms} core : core		V	1500
U_{rms} core : screen		V	1500
Operating voltage	max.	V	300

* filling elements are required to guarantee that glands will seal proper without damaging the cable.

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Nov 00 10P11149

Code No.:
70100225N0

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Site Identification No: 39501015

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DRUGS SHALL BE FURNISHED.	
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REVISED DRGS REQUIRED.	
NOT APPROVED NEW DRGS.	
REQUIRED.	
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अनुमोदन करत	Signature
APPROVED BY	दि./DATE 18/09/10
परियोजना PROJECT	MRPL
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LEONI

ICON Fieldbus Cable
Fieldbus Foundation H1

IEC 61158-2

Single-Pair, XLPE-Insulation, Overall Screen, Armour, PVC-Outer sheath
FB-v2X(S)Y(SR)Y-II Eco, armoured

90 °C / 300 V

Geometrical data

No. of pairs	Core diameter approx. (mm)	Diameter under armour approx. (mm)	RT of armour tape approx. (mm)	Diameter over armour approx. (mm)	RT of outer sheath nom. (mm)	Overall diameter approx. (mm)	Weight approx. (kg / km)	Part No.
AWG 16/7								
1	3.3	8.9	0.3	10.5	1.4	13.3	220	---

RT = Radial Thickness

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1. APPROVED 2. APPROVED AS MARKED FINAL DRUGS SHALL BE FURNISHED. 3. APPROVED AS MARKED REVISED DRGS. REQUIRED. 4. NOT APPROVED NEW DRGS. REQUIRED.	
अनुमोदन कर्ता APPROVED BY	हस्ताक्षर/SIGNATURE दि/DATE 18/01/10 परियोजना PROJECT MRPL
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LEONI

ICON Fieldbus Cable

Fieldbus Foundation H1

IEC 61158-2

Multi-Pair, XLPE-Insulation, Individual & Overall Screen, Armour, PVC-Outer sheath
FB-v2X(Si)Y(SR)Y-II PIMF armoured

90°C / 300 V

Application

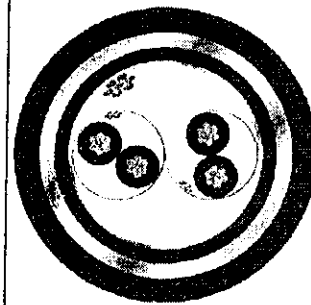
Fieldbus cable, Type A, for bus-systems Fieldbus Foundation acc. to IEC 61158-2. Suitable for use in hazardous classified locations class I and class II division 2 acc. to NEC 501-4(b) and NEC 502-4(b) or zone 1 and zone 2, group II, acc. to IEC 60079-14, resp.

Recommended for indoor and outdoor installation, in dry and wet locations, on racks, on trays, in conduits. Suitable for direct burial (please note the relevant legal/local installation requirement(s)).

Construction

Conductor..... stranded tinned copper, size: AWG 16/7
Insulation..... cross-linked polyethylene XLPE
Colour code..... (+)-core: brown; (-)-core: blue, pair identification with numbered tapes
Pair Screen..... plastic coated aluminium tape, in contact with stranded tinned copper drain wire
Twisting..... screened pairs with non hygroscopic filling elements* to cable core
Overall Screen..... plastic coated aluminium tape, in contact with stranded tinned copper drain wire
Bedding..... polyvinyl chloride PVC (Type ST2, IEC 60502-1), blue
Armour..... corrugated steel tape
Outer sheath..... polyvinyl chloride PVC (Type ST2, IEC 60502-1), blue for intrinsically safe systems
Marking..... LEONI KERPEN ICON FIELDBUS CABLE IEC 61158-2 100 Ω
(inkjet) H1 FF 2x2x16/7 AWG 300 V 90°C SUN RES
PRODUCTION LOT CODE LENGTH MARKING

(Example Sketch)



Technical Data

Flame propagation: UL 13 vertical tray test
IEC 60332-3-24 (cat. C)
Temperature range: -40°C up to +90°C
(during operation)
- 5°C up to +50°C
(during installation)
Oxygen index of inner & outer sheath: (min. 30%) ASTM D 2863
Temperature index (TI): (min. 250°C)
EN ISO 4589-3 (Annex A)
Oil resistance: ICEA S-73-532
UV resistant

Abbreviations

FB- Fieldbus Cable
v lined conductor
2X insulation of XLPE
(Si) overall screen with drain wire
Y bedding & outer sheath of PVC
(SR) corrugated steel tape
-II reduced flame propagation
PIMF Pair in Metal Foil

Electrical data at 20°C

	Character	Unit	Values
Conductor resistance (loop)	max.	Ω/km	29.8
Screen resistance (overall)	nom.	Ω/km	30
Mutual capacitance	nom.	nF/km	60
L/R (ratio)	approx.	μH/Ω	50
Inductance	nom.	mH/km	0.70
Capacitance unbalance to earth	max.	nF/km	4
Impedance at 31.25 kHz		Ω	100±20
Attenuation at 39 kHz	max.	dB/km	3.0
Propagation delay change (7.9 kHz – 39 kHz)	max.	μs/km	1.7
Test voltage U_{ms} core : core		V	1500
U_{ms} core : screen		V	1500
Operating voltage	max.	V	300

* filling elements are required to guarantee that glands will seal proper without damaging the cable.

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B.H.E.L. HYDERABAD - 32.

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4. NOT APPROVED NEW DRGS. REQUIRED.

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Site Identification No: 39501016

LEONI

ICON Fieldbus Cable
Fieldbus Foundation H1

IEC 61158-2

Multi-Pair, XLPE-Insulation, Individual & Overall Screen, Armour, PVC-Outer sheath
FB-v2X(SI)Y(SR)Y-II PiMF armoured

90°C / 300 V

Geometrical data

No. of pairs	Core diameter approx. (mm)	Diameter under armour approx. (mm)	RT of armour tape nom. (mm)	Diameter over armour approx. (mm)	RT of outer sheath nom. (mm)	Overall diameter approx. (mm)	Weight approx. (kg / km)	Part. No.
AWG 16/7								
2	3.3	14.2	0.3	15.8	1.4	18.6	370	---

RT = Radial Thickness

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