Indian Railways

Quadrant Future Tek Ltd.

ROLLING STOCK CABLES

Quadrant Future Tek Ltd.

Contents

Quadrant Future Tek Ltd.

ABOUT US

Quadrant Future Tek Limited is a Technology & Innovation-driven Company Certified to ISO/IRIS/TS Quality Management Systems. The company possess state-of-the-art Electronics Manufacturing & Cable Production facilities at Mohali (Punjab Province, India) and two dedicated Engineering Centres located at Bangalore & Hyderabad. Quadrant people policy is committed to realizing the intrapreneurial qualities in each of its employees by providing equal attention to both passion & profession. The approach to people includes a culture with a vibrant ecosystem that drives 'ownership'.

The company possess most modern production facilities including:

- State of the Art 2.5 MeV Electron Beam Irradiation facility
- Silicone & Polymer Vulcanization line
- Unique Polymer formulation Facility
- Conductor processing systems
- Fully Automated Electronic Manufacturing Line with Integrated Online Test Facility
- Fully Automated Testing & Simulation Centre for Development of Safety Critical Systems
- Dedicated Fabrication Facility
- High Speed moulding lines
- High Speed stamping machines
- High Speed Extrusion Lines

TEST INFRASTRUCTURE

Our in-house Laboratories are equipped to conduct the tests according to most of the internationally recognized test standards, including BIS, IEC, DIN, UIC, BS, UL, CE & CENELEC Standards. All the products undergo rigorous testing before they are a supplied to the customer.

VISION

Innovative Technologies to make Railways the most Enjoyable, Safer, Comfortable yet Cost Effective mode of Travel.

MISSION

Well supported by its mission that includes:

Enable, Empower and Engage our people by continuously enhancing their competencies and imbibing the culture of Entrepreneurship.
Establish a process of building Deep Relationships with Customers and make them partners while designing solutions.
Create a 'Centre of Excellence' & build and manage 'Intellectual Property'.
Building an efficient organization by establishing processes and continuous improvement.
Ensure sustainability by building formidable internal capability while continuing to leverage the expertise of partners / collaborators.

Certifications

Quadrant - ISO 14001:2015

ENVIRONMENTAL MANAGEMENT SYSTEM

Certificate of Registration

ROHS

This is to Certify That The Environmental Management System of

M/S QUADRANT FUTURE TEK LIMITED

VILLAGE-BASMA, (ON BASMA-JHAJJON ROAD), TEHSIL-BANUR
DISTT. -MOHALI-140417, PUNJAB (INDIA)

has been assessed and found to conform to the requirements of

ISO 14001:2015

for the following scope :

DESIGN, MANUFACTURE & SUPPLY OF ELECTRON BEAM CABLES, CONNECTORS, WIRING HARNESS, RAIL TRAFFIC MANAGEMENT SYSTEMS, ELECTRONIC INTERLOCKING SYSTEM, TRAIN COLLISSION AVOIDANCE SYSTEM, BRAKE INTERFACE UNIT & PCB ASSEMBLIES.

Certificate No	**24DEOX07**	
Initial Registration Date	: 30/12/2024	Issuance Date : 30/12/2024
Date of Expiry*	: 29/12/2027	
1st Surve. Due	: 30/11/2025	2nd Surve. Due: 30/11/2026

DIRECTOR
ROHS Certification Pvt. Ltd.

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
eiaci Emirates International Accreditation Centre
CB-EMS-035

A-60, 3rd Floor (TI), Sector 02, Noida, Gautam Buddha Nagar, Uttar Pradesh-201301
e-mail : info@rohscertification.co.in | website : www.rohscertification.co.in
The Registration is not a Product Quality Certificate, *Subject to successful completion of surveillance audits, Visit for verification on www.rohscertification.co.in
Certificate is the property of ROHS and return when demanded

Quadrant Future Tek Ltd.

Certifications

Quadrant - ISO 9001:2015

QUALITY MANAGEMENT SYSTEM

Certificate of Registration

ROHS

This is to Certify That The Quality Management System of

M/S QUADRANT FUTURE TEK LIMITED

VILLAGE-BASMA, (ON BASMA-JHAJJON ROAD), TEHSIL-BANUR
DISTT. -MOHALI-140417, PUNJAB (INDIA)

has been assessed and found to conform to the requirements of

ISO 9001:2015

for the following scope :

DESIGN, MANUFACTURE & SUPPLY OF ELECTRON BEAM CABLES, CONNECTORS, WIRING HARNESS, RAIL TRAFFIC MANAGEMENT SYSTEMS, ELECTRONIC INTERLOCKING SYSTEM, TRAIN COLLISION AVOIDANCE SYSTEM, BRAKE INTERFACE UNIT & PCB ASSEMBLIES.

Certificate No	**24DQOM16**	
Initial Registration Date	: 30/12/2024	Issuance Date : 30/12/2024
Date of Expiry*	: 29/12/2027	
1st Surve. Due	: 30/11/2025	2nd Surve. Due: 30/11/2026

DIRECTOR
ROHS Certification Pvt. Ltd.

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT
eiaci Emirates International Accreditation Centre
CB-QMS-035

A-60, 3rd Floor (T1), Sector 02, Noida, Gautam Buddha Nagar, Uttar Pradesh-201301
e-mail : info@rohscertification.co.in | website : www.rohscertification.co.in
The Registration is not a Product Quality Certificate. *Subject to successful completion of surveillance audits, Visit for verification on www.rohscertification.co.in
Certificate is the property of ROHS and return when demanded

Quadrant Future Tek Ltd.

Certifications

Quadrant - RDSO Certification

Fax : 0522 - 2465741
Telephone : 0522 - 2465741
email: qa.electrical.rdso@gmail.com

सत्यमेव जयते

भारत सरकार–रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन लखनऊ– 226011
Government of India - Ministry of Railways
Research Designs & Standards Organization, Lucknow-226011

No. RDSO-QAE0LKO(VEND)/57/2020 **Date 24.01.2022**

M/s Quadrant Future Tek Limited,
SCO 534, IInd Floor, Sector-70,
Mohali-160055,
Punjab, India
e-mail: **rsm.family@gmail.com**

Sub: Name Change of Approved Vendor due to Change in Vendor Entity.
Ref: (i) Firm's request letter no. Nil dated 29.11.021. (SN-40)
(ii) RDSO's ISO document No. QO-D-8.1-12 Ver-1.3, Vendor - Changes in vendor entity.

****

1. Vide reference (i), you have applied for "Change Of Name" due to "Change in Vendor Entity" from **M/s Quadrant Cables Pvt. Ltd to M/s Quadrant Future Tek Limited** for manufacture and supply of **(A) Item ID:** 3100270, Thin walled flexible elastomeric cables with copper conductors for working voltages (i) up to 750 volts and (ii) above 750 volts up to 1.8/3.0 kV for tap changer electric locomotives , AC/DC EMU, BG AC EMU & MEMU/ coaching stock (Chemical curing process / Electron Beam Irradiation curing process) as per RDSO's **Spec No.:** ELRS/SPEC/ELC/ 0019, Rev '4', **STR:** RDSO/ 2017/EL/STR/0087, Rev. 0 (Electron Beam Irradiation curing) and **(B) Item ID:** 3100272 , Thin Walled Cable for 3-phase locomotives as per RDSO's as per **Spec. No.:** Single Core CLW/ES/3/0458, and Multi Core CLW/ES/3/0459, **STR:** RDSO/2017/EL/STR/0087, Rev. 0 (Electronic Beam Irradiation curing).

2. The approval for "Change in Name due to Change in Vendor Entity" is as tabulated below:-

Existing Name of firm	Office & Works Address	Name Change approved	Works Address	Name of Item
M/s Quadrant Cables Pvt. Ltd	**Office:** SCO 534, IInd Floor, Sector-70, Mohali-160055, Punjab, India **Work:-** Vill - Basma Tehsil - Banur Mohali-140417, Punjab, India	**M/s Quadrant Future Tek Limited**	**Office:-** **SCO 534, IInd Floor, Sector-70, Mohali-160055, Punjab, India** **Works:-** **Vill- Basma Tehsil- Banur Mohali-140417, Punjab, India**	**A) Item ID:** 3100270, Thin walled flexible elastomeric cables with copper conductors for working voltages (i) up to 750 volts and (ii) above 750 volts up to 1.8/3.0 kV for tap changer electric locomotives , AC/DC EMU, BG AC EMU & MEMU/ coaching stock (Chemical curing process / Electron Beam Irradiation curing process) as per RDSO's **Spec No.:** ELRS/SPEC/ELC/ 0019, Rev '4', **STR:** RDSO/ 2017/EL/STR/0087, Rev. 0 (Electron Beam Irradiation curing) and **(B) Item ID:** 3100272 , Thin Walled Cable for 3-phase locomotives as per RDSO's as per **Spec. No.:** Single Core CLW/ES/3/0458, and Multi Core CLW/ES/3/0459, **STR:** RDSO/2017/EL/STR/ 0087, Rev. 0 (Electronic Beam Irradiation curing)

3. This issues with the approval of Competent Authority

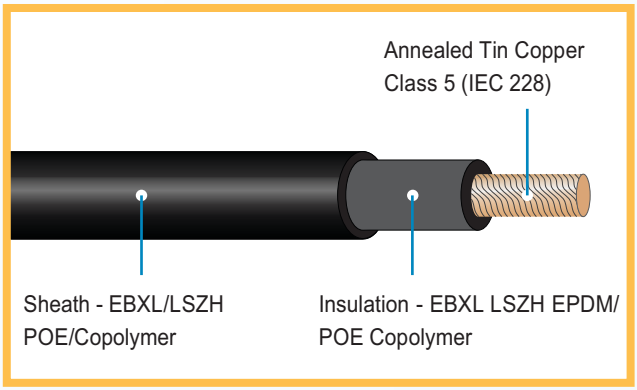
24.01.2022

(Rajesh Kumar)
Deputy Director/QA(Elect.)
For director General/QA(Elect.)

Quadrant Future Tek Ltd.

Speciality Cables

CLW.0458.OC Thin Walled EBXL Cable 4GKW 1.8KV Single Core (3Ph Electric Loco)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 1.8KV, Single Core for Railways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importance.

Technical Parameters

- Operating Temp: -40°C to +120°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5 (IEC 60228)
- Insulation: EBXL Copolymer-Grey
- Sheath: EBXL Copolymer-Black
- Min. Bending Radius: 3D (Cable Dia< 10mm)
  5D (Cable Dia> 10mm)
- Test Voltage: 6KV AC,50 Hz, 15Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to CLW spec no: CLW-ES-3-0458 AITC

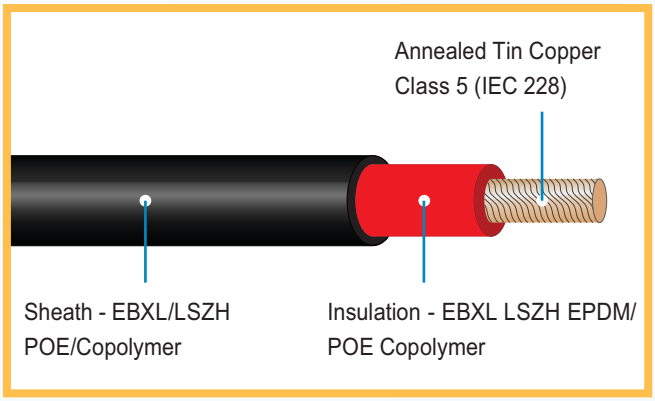
Part Code	CLW/ ES/3/0458 Data sheet 1	Nominal Cross Section (sq. mm)	Conductor Typical construction (m x m x mm)	Nominal Dia (mm)	Minimum Wall thickness			Cable Dia (mm)	R20 max. (ohm / km)	Weight nominal (Kg/100m)
					insulation (mm)	sheath (mm)	total (mm) combine			
CLW.0458.OC.01.01.01	Tab 1 S no 1	1.5	1 x 30 x 0.25	1.6	0.30	0.40	0.70	3.2 ± 0.10	13.70	2.0
CLW.0458.OC.01.01.02	Tab 1 S no 2	2.5	1 x 50 x 0.25	2.1	0.30	0.40	0.70	3.70 ±0.15	8.21	3.0
CLW.0458.OC.01.01.03	Tab 1 S no 3	6.0	1 x 84 x 0.30	3.3	0.35	0.45	0.80	5.10 ± 0.15	3.39	7.0
CLW.0458.OC.01.01.04	Tab 1 S no 4	10.0	1 x 80 x 0.40	4.2	0.40	0.50	0.90	6.30 ± 0.20	1.95	11.0
CLW.0458.OC.01.01.05	Tab 1 S no 5	16.0	7 x 18 x 0.40	5.5	0.50	0.70	1.20	8.30 ± 0.20	1.24	18.0
CLW.0458.OC.01.01.06	Tab 1 S no 6	25.0	7 x 27 x 0.40	6.8	0.60	0.80	1.40	10.20 ± 0.30	0.795	26.0
CLW.0458.OC.01.01.07	Tab 1 S no 7	35.0	7 x 37 x 0.40	7.8	0.65	0.85	1.50	11.70 ± 0.30	0.565	36.0
CLW.0458.OC.01.01.08	Tab 1 S no 8	50.0	7 x 54 x 0.40	9.5	0.70	0.90	1.60	13.60 ± 0.30	0.393	52.0
CLW.0458.OC.01.01.09	Tab 1 S no 9	70.0	12 x 29 x 0.50	11.5	0.75	0.95	1.70	16.60 ± 0.30	0.277	72.0
CLW.0458.OC.01.01.10	Tab 1 S no 10	95.0	12 x 38 x 0.50	12.9	0.85	1.05	1.90	17.80 ± 0.30	0.210	95.0
CLW.0458.OC.01.01.11	Tab 1 S no 11	120.0	19 x 30 x 0.50	14.8	0.95	1.15	2.10	19.60 ± 0.30	0.164	124.0
CLW.0458.OC.01.01.12	Tab 1 S no 12	150.0	19 x 39 x 0.50	16.3	1.00	1.20	2.20	21.90 ± 0.30	0.132	152.0

Colour: Black

Quadrant Future Tek Ltd.

Speciality Cables

CLW.0458.OC Thin Walled EBXL Cable 9GKW 4KV Single Core (3Ph Electric Loco)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 4KV, Single Core for Railways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importanc

Technical Parameters

- Operating Temp: -40°C to +120°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5 (IEC 60228)
- Insulation: EBXL Copolymer-Red
- Sheath: EBXL Copolymer-Black
- Min. Bending Radius: 3D (Cable Dia< 10mm)
  5D (Cable Dia> 10mm)
- Test Voltage: 12KV AC,50 Hz, 15 Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to CLW spec no: CLW-ES-3-0458 AITC

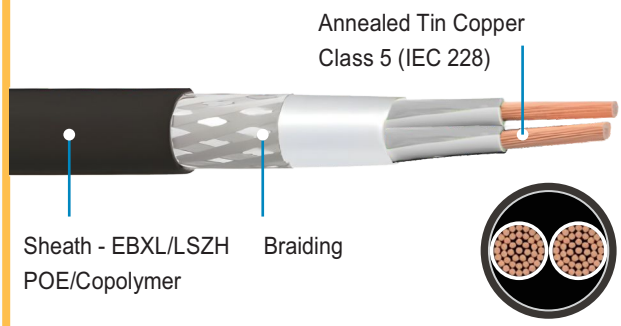
Part Code	CLW/ ES/3/0458 Data sheet 1	Nominal Cross Section (sq. mm)	Conductor Typical construction (m x m x mm)	Nominal Dia (mm)	Minimum Wall thickness			Cable Dia (mm)	R20 max. (ohm / km)	Weight nominal (Kg/100m)
					insulation (mm)	sheath (mm)	total (mm) combine			
CLW.0458.OC.02.01.01	Tab 1 S no 1	10.0	1 x 80 x 0.40	4.2	0.70	0.80	1.50	7.50 ± 0.20	1.95	14.0
CLW.0458.OC.02.01.02	Tab 1 S no 2	16.0	7 x 18 x 0.40	5.5	0.85	0.95	1.80	9.40 ± 0.30	1.24	21.0
CLW.0458.OC.02.01.03	Tab 1 S no 3	25.0	7 x 27 x 0.40	6.8	0.85	0.95	1.80	10.90 ± 0.40	0.795	29.0
CLW.0458.OC.02.01.04	Tab 1 S no 4	70.0	12 x 29 x 0.50	11.5	1.05	1.15	2.20	16.50 ± 0.40	0.277	77.0
CLW.0458.OC.02.01.05	Tab 1 S no 5	95.0	12 x 38 x 0.50	12.9	1.20	1.30	2.50	18.30 ± 0.50	0.210	102.0
CLW.0458.OC.02.01.06	Tab 1 S no 6	120.0	19 x 30 x 0.50	14.8	1.30	1.40	2.70	20.60 ± 0.50	0.164	130.0
CLW.0458.OC.02.01.07	Tab 1 S no 7	150.0	19 x 39 x 0.50	16.3	1.35	1.45	2.80	22.90 ± 0.50	0.132	161.0

Colour: Black

Quadrant Future Tek Ltd.

Speciality Cables

CLW.0459 Thin Walled EBXL Multicore Cable 300/300V (3Ph Electric Loco)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 300V, Multiple Core for Rail-ways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importance

Technical Parameters

- Operating Temp: -40°C to +120°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5
- Insulation: Single Layer
- Min. Bending Radius: 5D (Cable Dia< 10mm)
  7D (Cable Dia> 10mm)
- Test Voltage: 3KV AC,50 Hz, 1 Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to CLW spec no: CLW/ES/3/0459 AITC

Transmission Data

	<5x2x0.5	≥8x2x0.5	
Mutual Capacitance @1KHz			
(Core-Core)	115	110	nF/km
(Core-Screen)	190	180	nF/km
Characteristic Impedance (@100KHz)	70	75	Ohm
Capacitance Unbalance (b/w Pairs)	≤300	≤300	pF/500m

Part Code	CLW/ ES/3/0459 Data sheet 1	Nominal Cross Section (sq. mm)	Conductor Typical construc-tion (m x m x mm)	conduc-tor nominal Dia (mm)	Minimum Wall thickness			Core Dia (mm)	Cable Dia (mm)	R20 max. (ohm /km)	Weight nominal (Kg/ 100m)
					insulation (mm)	sheath (mm)	total (mm) combine				
CLW.0459.00.01.01.01	Tab 1, S no 1 (Screened cable)	2 x 0.5 SCR	19 x 0.176	0.86	0.25	0.75	1.00	1.45	5.3 + 0.3	41.1	4.3
CLW.0459.00.01.01.02	Tab 1, S no 2 (Screened cable)	3 x 0.5 SCR	19 x 0.176	0.86	0.25	0.75	1.00	1.45	5.5 + 0.3	41.1	4.7
CLW.0459.00.01.01.03	Tab 1, S no 3 (Screened cable)	2 x 2 x 0.5 SCR	19 x 0.176	0.86	0.25	0.90	1.15	1.45	7.8 + 0.3	43.1	9.2
CLW.0459.00.01.01.04	Tab 1, S no 4 (Screened cable)	5 x 0.5 SCR	19 x 0.176	0.86	0.25	0.80	1.05	1.45	6.8 + 0.3	41.1	7.9
CLW.0459.00.01.01.05	Tab 1, S no 5 (Screened cable)	9 x 0.5 SCR	19 x 0.176	0.86	0.25	0.55	0.89	1.45	8.2 + 0.3	41.1	11.8
CLW.0459.00.01.01.06	Tab 1, S no 6 (Twist)	9 x 0.5	19 x 0.179	0.89	0.25	0.80	1.05	1.45	7.0 + 0.3	41.1	8.6
CLW.0459.00.01.01.07	Tab 1, S no 7 (Twist)	25 x 0.5	19 x 0.179	0.89	0.25	0.95	1.20	1.45	11.2 + 0.4	41.1	21.0

Colour: Black

Quadrant Future Tek Ltd.

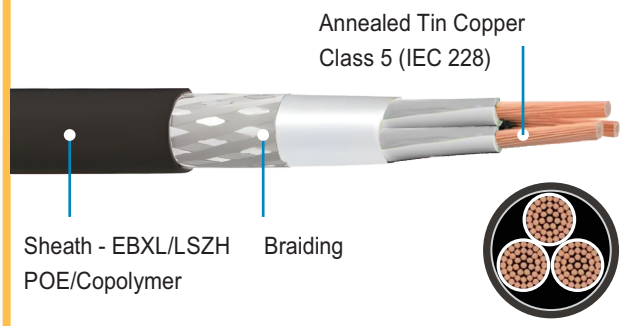
Part Code	CLW-ES-0459 Data sheet 1	CableType (n x mm2)	R20 max. (ohm / km)	Current Rating *		Transfer Impedance of emc- screen ***		
				in air (a)	on tray (a)	0...1 mhz (m ohm/m)	at 10 mhz (m ohm/m)	Upto 30mhz (m ohm/m)
CLW.0459.00.01.01.01	Tab 2, S no 1 (Screened cable)	2 x 0.5 SCR	41.1	17.4	15.8	25	18	40
CLW.0459.00.01.01.02	Tab 2, S no 2 (Screened cable)	3 x 0.5 SCR	41.1	14.6	13.2	25	18	40
CLW.0459.00.01.01.03	Tab 2, S no 3 (Screened cable)	2 x 2 x 0.5 SCR**	43.1	15.0	13.6	20	12	30
CLW.0459.00.01.01.04	Tab 2, S no 4 (Screened cable)	5 x 0.5 SCR	41.1	12.8	11.5	22	15	34
CLW.0459.00.01.01.05	Tab 2, S no 5 (Screened cable)	9 x 0.5 SCR	41.1	10.2	9.2	16	10	24

Colour: Black

Quadrant Future Tek Ltd.

Speciality Cables

CLW.0459 Thin Walled EBXL Multicore Cable 600/1000V (3Ph Electric Loco)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 600V, Multiple Core for Rail-ways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importance

Technical Parameters

- Operating Temp: -40°C to +120°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5 (IEC 60228)
- Insulation: Single Layer
- Min. Bending Radius: 5D (Cable Dia< 10mm)
  7D (Cable Dia> 10mm)
- Test Voltage: 6KV AC,50 Hz, 15Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to CLW spec no: CLW-ES-3-0459.

Transmission Data

	Pairs	Quads	
Mutual Capacitance @1KHz			
(Core/Core)	90	80	nF/km
(Core/Screen)	145	130	nF/km
Characteristic Impedance (@100KHz)	80	90	Ohm
Attenvation (@100KHz)	7	5	dB/km
Capacitance Unbalance b/w pairs	≤300	≤300	pF/500m

Part Code	CLW-ES-0459 Data sheet 1	CableType (n x mm2)	R20 max. (ohm / km)	Current Rating *		Transfer Impedance of emc- screen ***		
				in air (a)	on tray (a)	0...1 mhz (m ohm/m)	at 10 mhz (m ohm/m)	Upto 30mhz (m ohm/m)
CLW.0459.00.01.01.01	Tab 2, S no 1 (Screened cable)	2 x 0.5 SCR	41.1	17.4	15.8	25	18	40
CLW.0459.00.01.01.02	Tab 2, S no 2 (Screened cable)	3 x 0.5 SCR	41.1	14.6	13.2	25	18	40
CLW.0459.00.01.01.03	Tab 2, S no 3 (Screened cable)	2 x 2 x 0.5 SCR**	43.1	15.0	13.6	20	12	30
CLW.0459.00.01.01.04	Tab 2, S no 4 (Screened cable)	5 x 0.5 SCR	41.1	12.8	11.5	22	15	34
CLW.0459.00.01.01.05	Tab 2, S no 5 (Screened cable)	9 x 0.5 SCR	41.1	10.2	9.2	16	10	24

Colour: Black

Quadrant Future Tek Ltd.

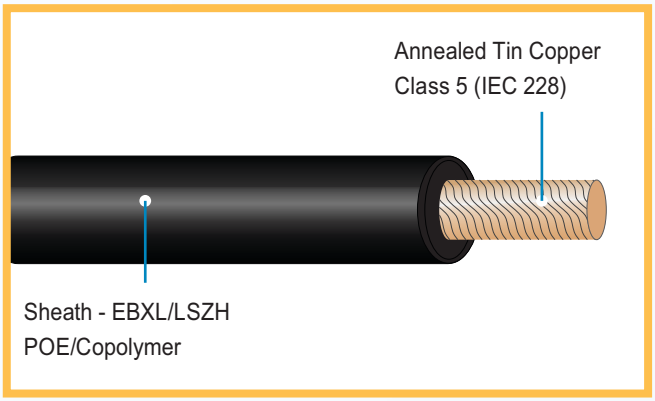
Part Code	CLW/ ES/3/0459 Data sheet 2	Nominal Cross Section (sq. mm)	Conductor Typical con - struction (m x m x mm)	conduc- tor nominal Dia (mm)	Minimum Wall thickness			Core Dia (mm)	Cable Dia (mm)	R20 max. (ohm /km)	Weight nominal (Kg/ 100m)
					insula- tion (mm)	sheath (mm)	total (mm) com- bine				
CLW.0459.00.02.01.01	Tab 1, S no 1	2 x 1.0 SCR (Screened cable)	19 x 0.25	1.25	0.5	0.80	1.30	2.30	7.1 ± 0.3	20.0	8.4
CLW.0459.00.02.01.02	Tab 1, S no 2	2 x 2 x 1.0 SCR* (Screened cable)	19 x 0.25	1.25	0.5	1.00	1.50	2.30	11.0 ± 0.4	20.4	18.1
CLW.0459.00.02.01.03	Tab 1, S no 3	3 x 4 x 1.0 SCR** (Screened cable)	19 x 0.25	1.25	0.5	1.30	1.80	2.30	15.5 ± 0.5	20.4	35.8
CLW.0459.00.02.01.04	Tab 1, S no 4	2 x 1.0 (Twist)	19 x 0.25	1.25	0.5	0.80	1.30	2.30	6.5 ± 0.3	20.0	6.4

Colour: Black

Quadrant Future Tek Ltd.

Speciality Cables

ELRS19.04 Thin Walled EBXL Cable 750V Single Core (Coaches & EMU's)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 750V, Single Core for Railways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importance

Technical Parameters

- Operating Temp: -40°C to +150°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5
- Insulation: Single Layer
- Min. Bending Radius: 3D (Cable Dia< 10mm)
  5D (Cable Dia> 10mm, 20mm)
  8D (Cable Dia> 20mm)
- Test Voltage: 6KV AC,50 Hz, 15Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to RDSO Spec: ELRS/ELC/0019 Rev.04

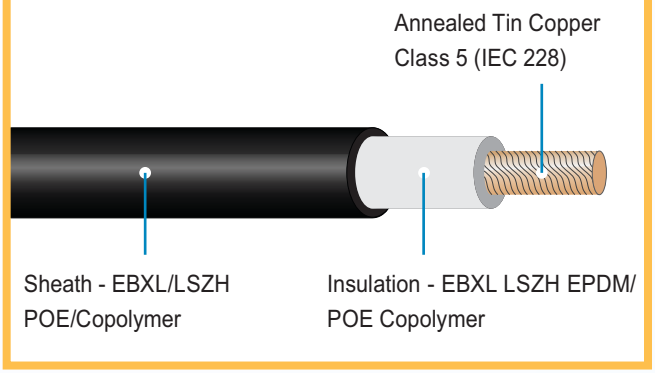
Part Code	ELRS/ELC/ 0019 Rev.04 Datasheet 2a	Nominal Cross Section (sq. mm)	Single Wire Dia. (max) (mm)	Min. insulation thk (mm)	Cable Dia (mm)	Max. cond resistance at 20°c (ohm/Km)
ELRS.19.04.2A.T1.01	Tab. 1, S.No.1	1.5	0.26	0.55	2.70±0.10	13.7
ELRS.19.04.2A.T1.02	Tab. 1, S.No.2	2.5	0.26	0.60	3.30±0.15	8.21
ELRS.19.04.2A.T1.03	Tab. 1, S.No.3	4.0	0.31	0.65	3.95±0.15	5.09
ELRS.19.04.2A.T1.04	Tab. 1, S.No.4	6.0	0.31	0.70	4.50±0.20	3.39
ELRS.19.04.2A.T1.05	Tab. 1, S.No.5	10.0	0.41	0.80	5.60±0.30	1.95
ELRS.19.04.2A.T1.06	Tab. 1, S.No.6	16.0	0.41	0.86	7.20±0.30	1.24
ELRS.19.04.2A.T1.07	Tab. 1, S.No.7	25.0	0.41	0.96	8.60±0.30	0.795
ELRS.19.04.2A.T1.08	Tab. 1, S.No.8	35.0	0.41	1.10	10.0±0.30	0.565
ELRS.19.04.2A.T1.09	Tab. 1, S.No.9	50.0	0.41	1.20	11.9±0.30	0.393
ELRS.19.04.2A.T1.10	Tab. 1, S.No.10	70.0	0.51	1.30	14.2±0.30	0.277
ELRS.19.04.2A.T1.11	Tab. 1, S.No.11	95.0	0.51	1.40	15.7±0.30	0.210
ELRS.19.04.2A.T1.12	Tab. 1, S.No.12	120.0	0.51	1.50	17.7±0.30	0.164
ELRS.19.04.2A.T1.13	Tab. 1, S.No.13	150.0	0.51	1.60	20.3±0.30	0.132

Colours: (As per Customer Requirement) Black, Red, Yellow, Blue, Green, Grey, Brown, White, chocolate, Green-Yellow

Quadrant Future Tek Ltd.

Speciality Cables

ELRS19.04 Thin Walled EBXL Cable 1.8/3.0 KV Single Core (Coaches & EMU's)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 1.8KV, Single Core for Railways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importance

Technical Parameters

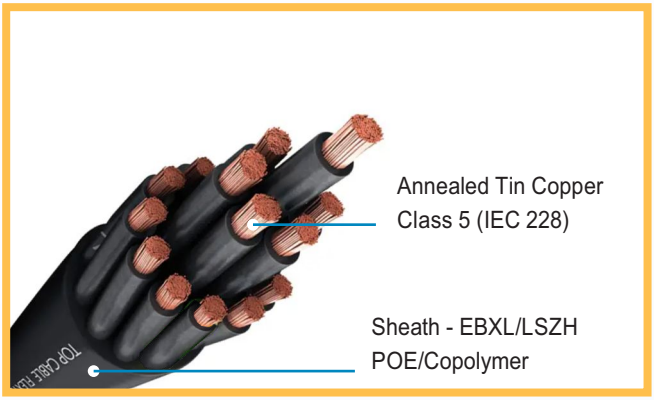
- Operating Temp: -40°C to +150°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5
- Insulation: EPDM/POE
- Sheath: EVA/POE
- Min. Bending Radius: 3D (Cable Dia< 10mm)
  5D (Cable Dia> 10mm, <20mm)
  8D (Cable Dia> 20mm)
- Test Voltage: 8KV AC,50 Hz, 15 Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to RDSO Spec: ELRS/ELC/0019 Rev.04

Part Code	ELRS/ELC/ 0019 rev.04 Datasheet 2a	Nominal Cross section (sq. mm)	Single wire Dia (max)	Minimum Wall thickness			Overall Cable Dia (D) mm	Max resistance of conductor at 20 Deg c (ohm/Km)
				Insulation (mm)	Sheath (mm)	Total (mm) combine		
ELRS.19.04.2A.T2.01	Tab. 2, S.No.1	1.5	0.26	0.30	0.40	0.70	3.20 ± 0.10	13.7
ELRS.19.04.2A.T2.02	Tab. 2, S.No.2	2.5	0.26	0.30	0.40	0.70	3.70 ± 0.15	8.21
ELRS.19.04.2A.T2.03	Tab. 2, S.No.3	4	0.31	0.35	0.45	0.80	4.50 ± 0.15	5.09
ELRS.19.04.2A.T2.04	Tab. 2, S.No.4	6	0.31	0.35	0.45	0.80	5.10 ± 0.15	3.39
ELRS.19.04.2A.T2.05	Tab. 2, S.No.5	10	0.41	0.40	0.50	0.90	6.30 ± 0.20	1.95
ELRS.19.04.2A.T2.06	Tab. 2, S.No.6	16	0.41	0.50	0.70	1.20	8.30 ± 0.20	1.24
ELRS.19.04.2A.T2.07	Tab. 2, S.No.7	25	0.41	0.60	0.80	1.40	10.2 ± 0.30	0.795
ELRS.19.04.2A.T2.08	Tab. 2, S.No.8	35	0.41	0.65	0.85	1.50	11.7 ± 0.30	0.565
ELRS.19.04.2A.T2.09	Tab. 2, S.No.9	50	0.41	0.70	0.90	1.60	13.6 ± 0.30	0.393
ELRS.19.04.2A.T2.10	Tab. 2, S.No.10	70	0.51	0.75	0.95	1.70	15.6 ± 0.30	0.277
ELRS.19.04.2A.T2.11	Tab. 2, S.No.11	95	0.51	0.85	1.05	1.90	17.3 ± 0.30	0.21
ELRS.19.04.2A.T2.12	Tab. 2, S.No.12	120	0.51	0.95	1.15	2.10	19.6 ± 0.30	0.164
ELRS.19.04.2A.T2.13	Tab. 2, S.No.13	150	0.51	1.00	1.20	2.20	21.9 ± 0.30	0.132
ELRS.19.04.2A.T2.14	Tab. 2, S.No.14	185	0.51	1.05	1.25	2.30	23.8 ± 0.30	0.108
ELRS.19.04.2A.T2.15	Tab. 2, S.No.15	240	0.51	1.10	1.30	2.40	26.9 ± 0.30	0.0817
ELRS.19.04.2A.T2.16	Tab. 2, S.No.16	300	0.51	1.15	1.35	2.50	29.7 ± 0.30	0.0654

Colours: Black, red, Yellow, Blue, Green, Grey, Brown, White, orange,Violet, chocolate, charcoal, Blue, purple, pink, Yellow-Green

Speciality Cables

ELRS19.04 Thin Walled EBXL Cable 1.8/3.0 KV 19 Core Cable (Coaches & EMU's)



Description

- Highly Flexible, Thin-Walled Electron Beam Irradiated Cables, Working Voltage 1.5KV, 19 Core for Railways Rolling Stock where Fire & Safety, Low Weight & Long-Term Performance are of utmost importance

Technical Parameters

- Operating Temp: -40°C to +150°C
- Short Term Temp: +180°C
- Conductor: Annealed Tinned Copper Class 5
- Test Voltage: 8KV AC,50 Hz, 15Minute
- Excellent Abrasion Resistance
- Halogen Free
- Ozone Resistance
- Low Smoke Density & Toxicity
- Resistant to Fluids, Oils, Diesel & Greases
- Conforms to RDSO Spec: ELRS/ELC/0019 Rev.04

Part Code	ELRS/ELC/ 0019 r ev.04 Datasheet 2B	Nominal Cross Section (sq.mm)	Single Wire Dia (max)	Minimum WallThickness			No of cores	Thickness of outer sheath (mm)	Overall cable Dia (D)mm	Max resistance of conductor at 20 Deg c (ohm/Km)
				Insulation (mm)	Sheath (mm)	Total (mm) combine				
ELRS.19.04.2B.T1.01	Tab. 1, S.No.1	2.5	0.26	0.30	0.40	0.70	19	1.4	23.0 ± 0.5	8.21
ELRS.19.04.2B.T1.02	Tab. 1, S.No.2	4	0.31	0.35	0.45	0.80	19	2.0	30.5 ± 0.1	5.09

Colour: Black

Quadrant Future Tek Limited

(formerly known as Quadrant Cables Pvt. Ltd.)

Corporate Office
First Floor, SCO 20-21, Sector 66A,
JLPL, Airport Road, Mohali - 160062, Punjab
Tel.: +91 172 4020228

Manufacturing Unit:
Village - Basma, On Basma-Jhajjon Road,
Tehsil - Banur, Distt. Mohali - 140417, Punjab
Mob.: +91 99533 33393