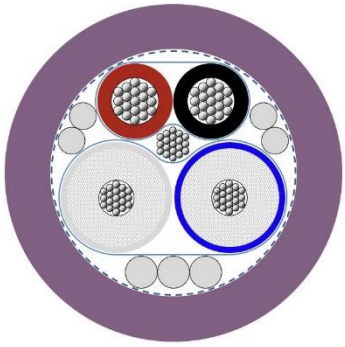
2170343	DATA SHEET	LAPP
valid from: 2025-11-06	UNITRONIC® BUS DN THIN Y 1x2x24/19AWG + 1x2x22/19AWG	

Application

Field of use:	Field bus cable for DeviceNet applications based on CAN technology standardized in IEC/EN 62026-3. For links between industrial devices such as sensors and actuators and higher-level devices such as PLCs and PCs.
Performance:	Screened foiled twisted pair cable, having a nominal impedance of 120 Ω. Designed for transmission rates of 125 Kbit/s up to 500 Kbit/s. For cable lengths up to 100 m. The cable consists of two wires for data transmission and two wires for power supply (24 V DC).
Characteristics:	flame retardant, no flame propagation, UV resistant
Applications:	for use as trunk cable or as drop cable in DeviceNet networks



Design

Certification	E224262 (UL) CL2 FT4 SUN RES acc. to. UL 13 E236660 c(UL)us CMG 75°C acc. to. UL 444 and CSA C22.2 No. 214		
Conductor	data pair:	fine-wire stranded tinned copper 24/19 AWG conductor diameter:	nom. 0.63 mm
	power pair:	fine-wire stranded tinned copper 22/19 AWG conductor diameter:	nom. 0.8 mm
Insulation	data pair:	foamed polyolefine core diameter:	nom. 2.0 mm
	power pair:	polyolefine core diameter:	nom. 1.4 mm
Core identification code	data pair: power pair:	white/blue red/black	
Stranding	data pair: power pair: overall assembly:	data cores twisted to pair power cores stranded to pair screened data pair and screened power pair stranded around a central drain wire	
Screen	data pair: power pair: overall assembly: drain wire:	plastic laminated aluminum foil plastic laminated aluminium foil braid of tinned copper wires (coverage 70 % ± 5 %) fine-wire stranded tinned copper (22/19 AWG)	
Taping	overall assembly:	non-woven tape	
Outer sheath	PVC violet, similar RAL 4001 outer diameter:	6.8 mm ± 0.3 mm	

Electrical properties at 20 °C

Conductor resistance	data pair: power pair: screen:	loop resistance: loop resistance: DC resistance:	max. 181.8 Ω/km max. 114.8 Ω/km nom. 10.5 Ω/km
Insulation resistance	data pair: power pair:	core/core: core/core:	≥ 5 GΩ×km ≥ 200 MΩ×km
Mutual capacitance	data pair:	core/core: core/screen:	nom. 39.37 nF/km (1 kHz) nom. 78.74 nF/km (1 kHz)

Capacitance unbalance	data pair:	core/core:	nom. 3937 pF/km (1 kHz)
Characteristic impedance	data pair:	1 MHz:	120 Ω ± 12 Ω
Attenuation	data pair:	125 kHz: 500 kHz: 1 MHz:	nom. 0.95 dB/100m nom. 1.64 dB/100m nom. 2.3 dB/100m
Signal propagation time	data pair:	1 MHz:	nom. 4.8 ns/m
Maximum operating voltage	overall assembly:	EN/IEC:	300 V (not intended to be used in conjunction with low impedance sources, such as power grids
Nominal voltage	power pair:	EN/IEC:	24 V DC
Rated voltage	overall assembly:	UL/CSA:	300 V
Test voltage	overall assembly:	core/core: core/screen:	2000 V 2000 V

Mechanical and thermal properties

Minimum bending radius	overall assembly:	fixed installation: occasional flexing:	8 × outer diameter 15 × outer diameter
Temperature range	overall assembly:	fixed installation: occasional flexing: UL/CSA:	-30 °C up to +80 °C -20 °C up to +70 °C 75 °C
Flammability	FT4 acc. to UL 1685 §12 - §19		
Weather and UV resistance	SUN RES acc. to UL 13 §29		
General requirements	These cables are conform to the EU-Directive 2011/65/EU (RoHS, Restriction of the use of certain hazardous substances) and the LV-Directive 2014/35/EU (Low voltage Directive).		
Environmental information	These cables meet the substance-specific requirements of the EU Directive 2011/65/EU (RoHS).		