



## LW213/214 and LW 215/216

Optical fiber modules for transmission of incremental encoder or sensor signals

### Product Features:

- The optical fiber modules LW213/214 or LW215/216 are data transmission systems for incremental signals of encoders or sensors by means of an optical fiber
- For use with all incremental encoders and sensors with TTL/RS422 or HTL (10 to 30V) output
- Four channels allowing a signal transmission with a sample rate of 10 Msamples/s each
- Safe and reliable transmission of signals, up to a distance of 3000 meters
- The optical fiber cable can be routed through explosive areas as well
- Input / Output data rate of max. 2 Mbit/s (transmitter and receiver)
- Resistant against extremely strong electromagnetic fields
- Already assembled optical fiber cables are available
- Power supply either 5 VDC or 10 to 30 VDC
- Compact DIN rail mounting

### Available Systems:

**LW213 / LW214:** Optical fiber modules with 1300 nm wave length and up to 3000 meters / approx. 10,000 feet distance

**LW215 / LW216:** Optical fiber modules with 850 nm wave length and up to 2000 meters / approx. 6,500 feet distance

Technical Order Specifications:			
Transmitter Module (1300 nm)	Transmitter Module ( 850 nm)	Output levels:	Power supply
LW213	LW215	RS422	5 VDC (± 5%)
LW213-1	LW215-1	RS422	10 ... 30 VDC
LW213-2	LW215-2	HTL (push-pull / dual channel) *	10 ... 30 VDC
LW213-3	LW215-3	HTL (push-pull / single channel)	10 ... 30 VDC
Receiver Module (1300 nm)	Receiver Module (850 nm)	Output levels:	Power supply
LW214	LW216	RS422	5 VDC (± 5%)
LW214-1	LW216-1	RS422	10 ... 30 VDC
LW214-2	LW216-2	HTL (push-pull)	10 ... 30 VDC

**Notice:** Transmitter and receiver with the same wave length are arbitrarily combinable

Technical Specifications:		
<b>Power supply:</b>	Input voltage: Ripple: Protection circuit: Consumption: Connections:	available versions see "Technical Order Specifications" ≤ 10 % at 24 VDC reverse polarity protection < 2 W (per module) screw terminal, 1.5 mm <sup>2</sup> / AWG 16
<b>Encoder supply:</b>	Output voltage:	according to the power supply voltage (is internally looped trough)
<b>Optical fiber connection:</b>	Optical wave length: Optical transmission rate: Glass fiber: Transmission distances: (transmitter and receiver) Connections:	850 nm resp. 1300 nm (multimode) 120 Mbit/s Multimode - fiber, 50/125 μm, 62.5/125 μm with 850 nm wave length: LWL = max. 2000 m / approx. 6,500 feet with 1330 nm wave length: LWL = max. 3000 m / approx. 10,000 feet ST-plug (at the underside of the housing)
<b>Electrical in- /outputs:</b>	Number of channels: Tracks: Signal levels: Data rate (input / output):	4 independent channels (A, B, C, D) A, /A, B, /B, C, /C, D, /D, resp. A, B, C, D with single-track versions HTL (10 ... 30 V) resp. RS422 max. 2 Mbit/s (transmitter and receiver)
<b>Signal processing:</b>	Conversion time: Sample rate (input signals):	< 300 ns per module 10 Msamples/s
<b>Display elements:</b>	Type: Functions:	1 x LED (green) continuously on: synchronization ok flashes : synchronization error resp. disconnected / broken optical fiber cable
<b>Housing:</b>	Material: Mounting: Dimensions: Protection class: Weight:	green plastic (RAL 6018) 35 mm top hat rail (according to EN 60715) 19 x 92.3 x 110 mm resp. 0.7480 x 3.634 x 4.331 inch IP40 / screw terminal: IP20 approx. 80 g
<b>Ambient temperature:</b>	Operation:	-10 °C ... +70 °C / 14° F ... 158° F (not condensing)
<b>Conformity &amp; standards:</b>	Interference resistance: Transient emissions: Guideline 2011/65/EU:	EN 61000-6-2:2006 EN 55011 Class B RoHS-conform

\*) dual channel transmitter variants cannot be operated as single channel units