



## SHIFT AEC SPECIFICATION

# Plug & Play AEC for Speed Shifting Ethernet Applications

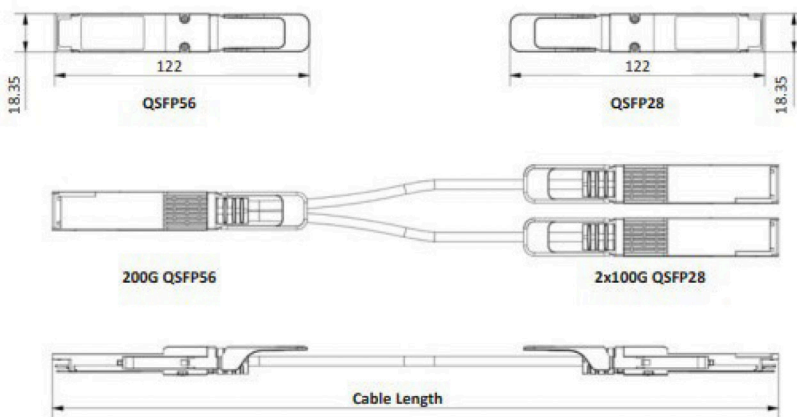
## 200G (4x56G) QSFP56 PAM4 to 2x100G (4x28G) QSFP28 NRZ

### Credo's HiWire™ SHIFT Active Electrical Cable (SHIFT AEC)

A lower power, lower cost solution to Active Optical Cable (AOC) transceiver solutions for high speed interconnect (up to 200Gbps). Powered by Credo's best-in-class signal processing technology, this Plug & Play cable provides connectivity between PAM4 and NRZ ports with speedshifting and FEC termination in-cable over thin copper cables without using any optical components.

### Credo's CAC2XXXX1Q2P-A0-HW HiWire SHIFT AEC

Designed for telecom and data center use. The 200G cable breaks out from one 200G (4x56G-PAM4) QSFP56 end into two 100G (4x28G-NRZ) QSFP28 ends. The use and replacement of CAC2XXXX1Q2P-A0-HW AEC is simple and straightforward as it adopts standard QSFP form factors and complies to MSA specifications.



## Features

The following are the key features of the HiWire SHIFT AEC:

- Recognizable purple jacket
- 200G to 2x100G with gearbox function
- SFF-8636 compliant
- Single 3.3V power supply
- Low power consumption:
  - Typ. 4.5W power dissipation (QSFP56)
  - Typ. 2.5W power dissipation (QSFP28)
- BER <  $10^{-15}$  (post FEC)
- Hot pluggable
- RoHS2 compliant
- I<sup>2</sup>C management interface
- Operating case temperature range: 0 to +70°C

## Supported Standards and Interfaces

- SNIA SFF-8636 Management Interface for 4 Lane Modules and Cables
- SNIA SFF-8679 QSFP28 Electrical Specification

## Key Features

Parameter	Value
Module Form Factor	QSFP56 and QSFP28
Number of Data Lanes	QSFP56 4 TX and 4 RX per Module (PAM4) QSFP28 Line Side: 4 TX and 4 RX per module (20G NRZ) Host Side: 4 TRX and 4 RX per module (10G NRZ)
Maximum Aggregate Data Rate	200Gbps
Nominal Data Rate per Lane	QSFP56: 53.125Gbps (PAM4), KR4 FEC must be enabled QSFP28: 25.78125Gbps (NRZ), KR4 FEC must be enabled
Electrical Interface and Pin-out	38-pin edge connector
Pin Description	Per SFF-8679
Management Interface	I <sup>2</sup> C, serial, timing per SFF-8636
Length of Copper AEC	3.0m , 5.0m
BER (Pre-FEC)*	Typ. <10 <sup>-8</sup>
BER (Post-FEC)*	<10 <sup>-15</sup>

\* Tested with QPRBS31 pattern

## Product Selections

Part Number	Length	AWG
CAC23X301Q2P-A0-HW	3.0m	30
CAC25X301Q2P-A0-HW	5.0m	30

## Mechanicals

Parameter	Cable Type	Typical
Diameter	4P 30WG	5.3mm
Minimum bend radius (QSFP56 end)	4P 30AWG x2	59.0mm
Minimum bend radius (QSFP58 end)	4P 30AWG	54.5mm

## About Credo

Credo's mission is to advance high-speed connectivity solutions that deliver optimized performance, reliability, energy efficiency, and security for the next generation of AI driven applications, cloud computing, and hyperscale networks.

Optimized for both optical and electrical applications, our solutions support port speeds up to 1.6Tb. At the core of our technology is our proprietary Serializer/Deserializer (SerDes) IP. Our diverse solutions portfolio includes system-level products such as Active Electrical Cables (AECs), a range of Integrated Circuits, including Retimers, Optical DSPs, SerDes chipsets, and SerDes IP Licensing.

For more information please visit [www.credosemi.com](http://www.credosemi.com) or email [sales@credosemi.com](mailto:sales@credosemi.com)

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