



## FEATURES:

- D38999 MIL-STD interface
- Tactical fiber optic cable
- Optical Transmission Medium Types: Multi-Mode and/or Single-Mode
- Up to 3GHz analog RF signal
- Environment sealed IP67 when mated
- Single DC Supply: +12V to +30V
- Extended Temperature Available -40°C to +80°C
- I2C Interface for Health Monitoring
- EMI/RFI filter in the I/O interface
- Complies with MIL-STD-810
- Complies with MIL-STD-461

## APPLICATIONS:

- Harsh Environment Analog and Digital Communication Links
- Remote Control Applications
- Remote Antennas
- Long Reach Applications
- Tactical Military Applications
- Cellular backhaul

## JOINT VENTURE DESIGN:



## OVERVIEW

The ACON series is an Electro-Optic active cable supporting both analog and digital signals transmission over fiber in harsh environment <sup>(1)</sup>

The ACON products family is based on MIL-STD-D38999 series III connector and enable transferring a wide range of signals and protocols, standard and non-standard per specific applications.

It enables customers to leverage the advantages of optical communication, including high data rates, longer reaches, high noise susceptibility, lower weights and smaller form factor, for harsh environment applications while optical interfaces “invisible” to the system integrator and/or the end user. This eliminates the optical interfaces maintenance (mainly connectors cleaning) for the service personnel. In addition it makes the electro optical design seamless for the system designers as both ends of the cable are of electrical signals type.

The ACON 17-99 series is based on D38999 size 17-99. It supports a combination of 10/100/1000 Base-T Ethernet and/or RF analog signal up to 3GHz bandwidth for up to 5Km cable length. It contains integrated magnetic function as EMI/RFI filter for the Ethernet line to secure the signal from customer coper I/O panel

## SPECIFICATIONS

Parameter	Value	Unit
<b>Electrical Specification</b>		
Voltage Supply (Vcc)	+12 to +30	VDC
Power Supply	Up to 3.5	W
<b>RF LINK Specification</b>		
BW	3	GHz
Gain	0	dB
Flatness	±4	dB
SFDR	104	dB
RF Input / Output Impedance	50	Ohms
<b>Ethernet Specification</b>		
Data rate	10/100/1000	Mb/sec
Cable length (Cat. 5, BER<10-12)	100	m
<b>Environmental Specification<sup>(2)</sup></b>		
Relative Humidity (non-condensing)	85	%
Operating Case Temperature	-40 to +80	°C
Storage Case Temperature	-40 to +85	°C

<sup>(1)</sup>Patent Pending

<sup>(2)</sup>For cable environmental spec see page 3



## OPTICAL &amp; ELECTRICAL CABLE SPECIFICATION

<b>Applications:</b>	Harsh environments, Outdoor installations
<b>General Construction:</b>	This is a hybrid cable consisting of two 20 AWG twisted pairs, one 16 AWG twisted pair and two MM OM-3 FO mini-cables, cabled together with filling elements, aramid yarns reinforced and jacketed.
<b>Outer Jacket Material:</b>	PU
<b>Outer Diameter:</b>	10.5 mm nom.
<b>Weight:</b>	110 kg/km



## Cable Design &amp; Materials

**Detailed Construction:****20 AWG Pairs**

Conductors: Stranded tinned copper, 19x0.2 mm

Insulation: PE, 1.4 mm nom

Color Code: White X Black

**16 AWG Pair**

Conductors: Stranded tinned copper, 19x0.28 mm

Insulation: XLPE, 2.1 mm nom

Color Code: White X Black

<b>Conductor Material:</b>	Annealed Tinned Copper
<b>Conductor Size:</b>	20 AWG
<b>Conductor Construction:</b>	19x0.20 mm
<b>Inner Conductor Material:</b>	Tinned Copper
<b>Insulation Material:</b>	PE
<b>Insulation O.D.:</b>	1.4 mm nom.
<b>Buffer Material:</b>	FR-LSZH
<b>Buffer Diameter:</b>	900 µm
<b>Fiber or Tube Color Code:</b>	Blue, Orange
<b>Pair Identification:</b>	Numbered
<b>Conductor Color Code:</b>	Black X White
<b>Strength Elements:</b>	Aramid Yarns
<b>Number of fibers:</b>	2
<b>Total number of conductors:</b>	6
<b>Total number of elements:</b>	5

## Cable Standards

<b>Applicable Standards:</b>	MIL-STD-810F, IEC 60794, RoHS-2 2011/65/EU
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## Cable Performance

<b>Max. DC Resistance:</b>	33 Ω/km@20°C
<b>Dielectric Strength:</b>	700 V/minute
<b>Tensile Strength - Short Term:</b>	2700 N max.
<b>Tensile Strength - Long Term:</b>	1500 N max.
<b>Min. Bend Radius for Installation:</b>	20xD mm
<b>Min. Bend Radius:</b>	10xD mm
<b>Min. Bend Radius for Operation:</b>	100 mm
<b>Max. Operating Temperature:</b>	+70 °C
<b>Min. Operating Temperature:</b>	-40 °C
<b>Max. Storage Temperature:</b>	+70 °C
<b>Min. Storage Temperature:</b>	-40 °C
<b>UV resistance:</b>	Yes
<b>Fungus Resistance:</b>	Yes