

## Product Highlights

### Ideal for Campus Applications

Support for maximum cable lengths between 100m and 10km is ideal for businesses spanning multiple premises

### High Performance

Gigabit, 10-Gigabit and 40-Gigabit data transfer rates provide network transmission speeds that business environments demand

### Hot Pluggable

Easily switch out transceivers while the power is on, facilitating network maintenance and minimizing downtime



## DEM-300 Series / DEM-400 Series / DEM-QX Series

# Gigabit / 10 Gigabit / 40 Gigabit Optical Transceivers

## Features

### Gigabit Transceivers

- Small Form-Factor Pluggable (SFP)
- Multimode fiber and single-mode fiber versions
- Hot pluggable
- Supports 1G Ethernet
- RoHS Compliant
- Compliant with MSA (Multiple Source Agreement)
- Compliant with IEEE 802.3z standard

### 10 Gigabit Transceivers

- Enhanced Small Form-Factor Pluggable (SFP+)
- Multimode fiber and Single-mode fiber versions
- Hot pluggable
- Supports 10G Ethernet
- RoHS Compliant
- Compliant with MSA (Multiple Source Agreement)
- Compliant with IEEE 802.3ae & 802.3aq standards

### 40 Gigabit Transceivers

- Quad Small Form-Factor Pluggable (QSFP+)
- Multimode fiber and Single-mode fiber versions
- Hot pluggable
- Supports 40G Ethernet
- RoHS compliant
- Compliant with MSA (Multiple Source Agreement)
- Compliant with IEEE 802.3ba 40GBASE QSFP+

## Overview

D-Link optical transceivers plug into Ethernet switches via the GBIC slots. A transceiver converts electrical signals from a switch into light pulses, which allows for high-speed connections over single-mode or multimode fiber-optic cabling. D-Link optical transceivers are available supporting speeds from 1Gbps to 40Gbps. The transceivers utilize standard connector types including duplex LC and MPO. They are hot pluggable and compliant with the Multi-Source Agreement (MSA) specification.

## Small Form-Factor Pluggable (SFP) Package

All transceivers utilize industry standard form-factors. Gigabit SFP transceivers use the Small Form-factor Pluggable (SFP) design. 10-Gigabit transceivers use the Enhanced Small Form-factor Pluggable (SFP+) design, while 40-Gigabit transceivers use the Quad Small Form-factor Pluggable (QSFP+) design. All transceivers provide the necessary signal amplification for data to be transmitted to the network cable from the port, and vice versa.

## Fiber Advantages

Pluggable optical transceivers allow IT professionals to leverage the pay-as-you-grow approach, enabling ports for fiber capabilities on an as-needed basis. The use of fiber instead of copper cabling for Ethernet applications has multiple advantages. While copper cabling is normally limited to 100m in distance, fiber supports Ethernet links to 10km and beyond. Fiber is also advantageous for outdoor use, and helps avoid issues with electromagnetic interference, lightning, and power surges.

**Hot Pluggable**

All D-Link transceivers are hot pluggable. Users can connect a transceiver while the system is powered on without causing any issues, and easily swap one for another without having to reboot the switch each time. This permits modules to be added or removed without interrupting the network, facilitating maintenance and greatly reducing downtime.

**Two-year Limited Warranty**

D-Link offers a two-year Limited Warranty on all SFP, SFP+ and QSFP+ optical transceivers to further its commitment to product quality and long-term customer confidence.<sup>2</sup>

**Technical Specifications**

	1 Gbps Optical Transceivers - Standard Operating Temperature	
	DEM-311GT	DEM-310GT
Revision	I1	I1
Transceiver Type	SFP	SFP
Fiber Media Support	Multimode	Single-mode
Wavelength	850 nm	1310 nm
Speed	1.25 Gbps	1.25 Gbps
Distance	62.5/125 $\mu$ m: 300 m 50/125 $\mu$ m: 550 m	10 km
Compliant Standard	IEEE802.3z 1000BASE-SX	IEEE802.3z 1000BASE-LX
Connector	Duplex LC	Duplex LC
Single/Bi Direction	Single-direction	Single-direction
Cable Type	Multimode 50/125 $\mu$ m or 62.5/125 $\mu$ m	Single-mode 9/125 $\mu$ m
Power Supply	3.3V	3.3V
Operating Temp. Range	0°C to +70°C	0°C to +70°C
Min. Tx Power	-8 dBm	-8 dBm
Max. Tx Power	-3 dBm	-3 dBm
Min. Rx Power	-22 dBm	-24 dBm
Max. Rx Power	-3 dBm	-3 dBm
Link Budget	14 dB	16 dB
Hot Pluggable	Yes	Yes
MSA Compliant	Yes	Yes
RoHS Compliant	Yes	Yes
Bail Latch Color	Black	Blue



**Technical Specifications**

	1 Gbps Optical Transceivers - Extended Operating Temperature	
	<b>DIS-S301SX</b>	<b>DIS-S310LX</b>
Revision	A1	A1
Transceiver Type	SFP	SFP
Fiber Media Support	Multimode	Single-mode
Wavelength	850 nm	1310 nm
Speed	1.25 Gbps	1.25 Gbps
Distance	62.5/125 $\mu$ m: 300 m 50/125 $\mu$ m: 550 m	10 km
Compliant Standard	IEEE802.3z 1000BASE-SX	IEEE802.3z 1000BASE-LX
Connector	Duplex LC	Duplex LC
Single/Bi Direction	Single-direction	Single-direction
Cable Type	Multimode 50/125 $\mu$ m or 62.5/125 $\mu$ m	Single-mode 9/125 $\mu$ m
Power Supply	3.3 V	3.3 V
Operating Temp. Range	-40°C to +85°C	-40°C to +85°C
Min. Tx Power	-8 dBm	-8 dBm
Max. Tx Power	-3 dBm	-3 dBm
Min. Rx Power	-22 dBm	-24 dBm
Max. Rx Power	-3 dBm	-3 dBm
Link Budget	14 dB	16 dB
Hot Pluggable	Yes	Yes
MSA Compliant	Yes	Yes
RoHS Compliant	Yes	Yes
Bail Latch Color	Black	Blue



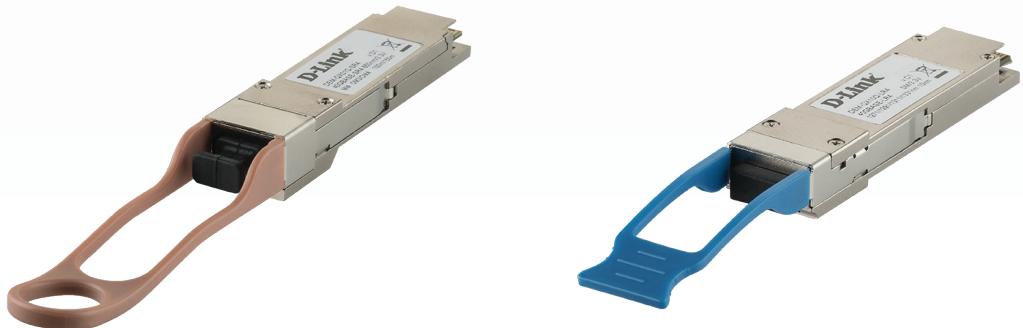
**Technical Specifications**

	10 Gbps Optical Transceivers - Standard Operating Temperature	
	DEM-431XT	DEM-432XT
Revision	D2	D2
Transceiver Type	SFP+	SFP+
Fiber Media Support	Multimode	Single-mode
Wavelength	850 nm	1310 nm
Speed	10 Gbps	10 Gbps
Distance	50/125 $\mu$ m OM3: 300 m	10 km
Compliant Standard	IEEE802.3ae 10GBASE-SR	IEEE802.3ae 10GBASE-LR
Connector	Duplex LC	Duplex LC
Single/Bi Direction	Single-direction	Single-direction
Cable Type	Multimode 50/125 $\mu$ m or 62.5/125 $\mu$ m	Single-mode 9/125 $\mu$ m
Power Supply	3.3 V	3.3 V
Operating Temp. Range	0°C to +70°C	0°C to +70°C
Min. Tx Power	-5 dBm	-8 dBm
Max. Tx Power	-1 dBm	0 dBm
Min. Rx Power	-11.5 dBm	-14.5 dBm
Max. Rx Power	-0 dBm	0 dBm
Link Budget	6.5 dB	6.5 dB
Hot Pluggable	Yes	Yes
MSA Compliant	Yes	Yes
RoHS Compliant	Yes	Yes
Bail Latch Color	Black	Blue



**Technical Specifications**

	40 Gbps Optical Transceivers - Standard Operating Temperature	
	DEM-QX01Q-SR4	DEM-QX10Q-LR4
Revision	D1	C1
Transceiver Type	QSFP+	QSFP+
Fiber Media Support	Multimode	Single-mode
Wavelength	850 nm	1271 nm, 1291 nm, 1311 nm, 1331 nm
Speed	40 Gbps	40 Gbps
Distance	50/125um OM3: 100m 50/125um OM4: 150m	10 km
Compliant Standard	IEEE 802.3ba	IEEE 802.3ba
Connector	MPO	Duplex LC
Single/Bi Direction	Single-direction	Single-direction
Cable Type	Multimode 50/125um or 62.5/125um	Single-mode 9/125 $\mu$ m
Power Supply	3.3 V	3.3 V
Operating Temp. Range	0°C to +70°C	0°C to +70°C
Min. Tx Power	-7.6 dBm	-7 dBm
Max. Tx Power	2.4 dBm	2.3 dBm
Min. Rx Power	-9.5 dBm	-13.7 dBm
Max. Rx Power	2.4 dBm	2.3 dBm
Link Budget	1.9 dB	6.7 dB
Hot Pluggable	Yes	Yes
MSA Compliant	Yes	Yes
RoHS Compliant	Yes	Yes
Bail Latch Color	Beige	Blue

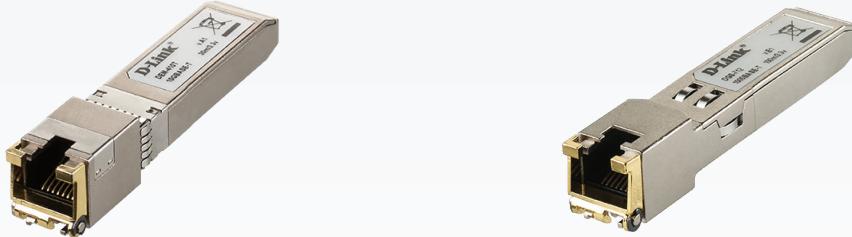


# DEM-300 Series / DEM-400 Series / DEM-QX Series

## Gigabit / 10 Gigabit / 40 Gigabit Optical Transceivers

### Technical Specifications

	10 Gbps RJ45 - Standard Operating Temp.	1 Gbps RJ45 - Standard Operating Temp.
	DEM-410T	
Revision	A1	E1
Transceiver Type	SFP+	SFP
Speed	10 Gbps	1 Gbps
Distance	30 m (CAT6A @ 10 Gbps) 100 m (CAT5e @ 1 Gbps)	100 m
Compliant Standard	IEEE 802.3an 10GBASE-T; IEEE 802.3ab 1000BASE-T	IEEE 802.3ab 1000BASE-T
Connector	RJ45	RJ45
Cable Type	CAT6A	CAT5, CAT5e, CAT6
Power Supply	3.3V	3.3V
Operating Temp. Range	0°C to +65°C	0°C to +70°C
Hot Pluggable	Yes	Yes
MSA Compliant	Yes	Yes
RoHS Compliant	Yes	Yes



### Ordering Information

Model number	Description	Warranty
<b>Standard Operating Temperature</b>		
DEM-311GT	1000BASE-SX Multimode SFP Optical Transceiver, 0°C to +70°C	2-Year Limited
DEM-310GT	1000BASE-LX Single-mode SFP Optical Transceiver, 0°C to +70°C	2-Year Limited
DEM-431XT	10GBASE-SR Multimode SFP+ Optical Transceiver, 0°C to +70°C	2-Year Limited
DEM-432XT	10GBASE-LR Single-mode SFP+ Optical Transceiver, 0°C to +70°C	2-Year Limited
DEM-QX01Q-SR4	40GBASE-SR Multimode QSFP+ Optical Transceiver, 0°C to +70°C	2-Year Limited
DEM-QX10Q-LR4	40GBASE-LR Single-mode QSFP+ Optical Transceiver, 0°C to +70°C	2-Year Limited
DGS-712	1000BASE-T to SFP Transceiver, 0°C to +70°C	2-Year Limited
DEM-410T	10GBASE-T to SFP Transceiver, 0°C to +65°C	2-Year Limited
<b>Wide Operating Temperature</b>		
DIS-S301SX	1000BASE-SX Multimode SFP Optical Transceiver, -40°C to +85°C	2-Year Limited
DIS-S310LX	1000BASE-LX Single-mode SFP Optical Transceiver, -40°C to +85°C	2-Year Limited

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DEM-SERIES\_Datasheet\_1.10\_EN\_US.PDF

### FOR MORE INFORMATION

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