

## DMX Opto vs. Standard Input/Output IC Comparison Table



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### DMX Input and Output Type Comparison Table

	Standard IC	Optical Isolated IC	TVS Isolation IC	True Fault IC
<b>Isolation Type</b>	Electronic	Optical	Electronic - Transient Voltage Suppression	Electronic
<b>Line Load</b> <i>(input impedance)</i>	1/32 (Apx 1.9mA Line Load)	1/2 (Apx 25mA Line Load)	1/128 (Apx .5mA Line Load)	1/256 (Apx .25mA Line Load)
<b>Fault Indication</b> <i>broken or loose wire</i>	*Unstable (LED = unknown)	*Stable (LED = Off)	*Stable (LED = Off)	*Stable (LED = Off)
<b>Fault Indication</b> <i>Open w/ Termination</i>	*Unstable (LED = unknown)	*Stable (LED = Off)	*Unstable (LED = unknown)	*Stable (LED = Off)
<b>DMX512 Conformity</b>	Yes	**No	Yes	Yes

### ELM Video Technology Product Line Comparison Table

ELM Video Technology Products	Standard IC <i>(see note 1)</i>	**Optical Isolated IC <i>(see note 2)</i>	TVS Isolation IC <i>(see note 3)</i>	True Fault IC <i>(see note 4)</i>
<b>DS4</b> 1x4 Splitter	(4) Standard Output IC's			True Fault Input IC
<b>DS4</b> 1x4 Splitter w/ Chipset Upgraded			(4) TVS Output IC's	True Fault Input IC
<b>DSI-4</b> 1x4 Opto In Iso Splitter	(4) Standard Output IC's	Optical Input IC		
<b>***DBOP</b> Optical Buffer	(1) Standard Output IC			True Fault Input IC
<b>***DBOP</b> Optical Buffer Upgraded chipset			TVS Output IC	True Fault Input IC
<b>DS5</b> 1x5 Splitter	(5) Standard Output IC's			True Fault Input IC
<b>DS5</b> 1x5 Splitter Upgraded chipset			(5) TVS Output IC's	True Fault Input IC
<b>DS8D</b> 1x8 Splitter w/ Standard In Option	(8) Output IC's (w/ Standard Input Option)		(8) TVS Output IC's (w/ Chipset Upgrade)	True Fault Input IC
<b>DS8D</b> 1x8 Splitter w/ Optical In Option	(8) Output IC's (w/ Standard Input Option)	Optical Input IC	(8) TVS Output IC's (w/ Chipset Upgrade)	
<b>DXI</b> Mini Opto Iso Buffer	Standard Output IC	Optical Input IC	(Optional) TVS Output IC	
<b>DXT</b> Mini Buffer/Driver	Input IC & Output IC			
<b>DXT, DOXMx</b> Mini Buffer/Driver Upgraded chipset	Standard Output IC	Optical Input IC		

Note 1 - Standard IC is a general purpose DMX I-O circuit

Note 2 - Optical Input IC is an LED load input IC offering optical isolation from input to output, see pros/cons/and \*\*notes below

Note 3 - TVS Isolation is a Transient Voltage Suppression IC offering more voltage protection than a standard I-O IC

Note 4 - True Fault Input IC offers an accurate LED input indication with an unconnected or unstable input (with standard input protection)

\*Circuit design and environment affect the output

\*\* Optical Isolated IC used does NOT conform to the DMX512 standards but should work with most systems.

\*\*\*The DBOP2 (Dual Power Supply Version) is designed with isolated power and gnd inputs between the input and output circuits

#### The Advantages of Optical Isolation on the input of a device

- Potentially higher voltage isolation protection than a standard balanced input IC
- Current driven input - in the event that 1 of the wires of the 2 wire balanced DMX line stops working the output of the Iso chip will go high.

#### The Disadvantage of Optical Isolation on the input of a device

- Requires a higher current than a standard balanced input IC. (Connect only 16 devices on the daisy chain instead of the normal 32). If the Opto device is connected directly out of the console this should not be a problem.

#### **The Advantages of TVS Isolation IC on the input of a device**

- Offers protection between the output device and the input device using **Transient Voltage Suppression**.
- Hi Z input (less line load on the daisy chain)
- Without a connection (floating input) the IC has a high output - won't send miscellaneous data

#### **The Disadvantage of TVS Isolation IC on the input of a device**

- Standard Input IC - if 1 of the wires of the 2 wire balanced DMX line stops working the output of the IC is miscellaneous (unstable)

#### **The Advantage of True Fault IC on the input of a device**

- TRUE FAULT INDICATION IC gives a true data/active indication in any condition: OPEN, OPEN w/ TERMINATION, SHORTED, or ACTIVE.
- High Z input, could have 256 inputs daisy chained.

#### **The Disadvantage of True Fault IC on the input of a device**

- The True Fault IC offers only electronic isolation from input to the output of the IC.
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