

Low Cost Redundancy Switching!



Products:

DEV 1018/zz -	8:1 (De-) Multiplexer CATV-Band zz Ohm
DEV 10116/zz -	16:1 (De-) Multiplexer CATV-Band zz Ohm
DEV 1218/zz -	8:1 (De-) Multiplexer L-Band zz Ohm
DEV 12116/zz -	16:1 (De-) Multiplexer L-Band zz Ohm
DEV 1258/zz -	8:1 Active Multiplexer L-Band zz Ohm
DEV 12516/zz -	16:1 Active Multiplexer L-Band zz Ohm

Features:

- **DEV 1018/zz, DEV 10116/zz:**
(De-) Multiplexers with 8 or 16 Ports for the CATV-Band
in **zz:** 50 or 75 Ohm
- **DEV 1218/zz, DEV 12116/zz:**
(De-) Multiplexers with 8 or 16 Ports for the L-Band
in **zz:** 50 or 75 Ohm
- **DEV 1258/zz, DEV 12516/zz:**
Active Multiplexers with 8 or 16 Ports for the L-Band
in **zz:** 50 or 75 Ohm, providing Continuous Monitoring of
RF Signal Levels
- Dual Redundant Power Supplies with Status Alarm Output
- Remote Control Protocol Support
- Space Requirement only 1 RU

Application Areas:

- Satellite Ground Stations
- Cable Head End Stations

DEV 1xy8 / DEV 1xy16



Front DEV 10116/zz



Rear DEV 10116/50

The Situation

In satellite ground stations and cable head end stations it is necessary to provide means for redundancy switching, i.e. to switch several input sources to one output or to route an input signal to different destinations.

DEV worked out a Solution

For this purpose DEV developed a series of passive 8 or 16 port CATV-Band switches (DEV 1018/zz and DEV 10116/zz) and L-Band switches (DEV 1218/zz and DEV 12116/zz) which can be operated as multiplexer or demultiplexer.

In addition, the active L-Band multiplexers DEV 1258/zz and DEV 12516/zz were developed to be applied as a redundancy switch for receivers. These 8:1 or 16:1 multiplexers are intended for signal routing and provide in addition the functionality to monitor the incoming RF signal level in comparison with an adjustable threshold value. The instrument is capable to send out a message to a Network Management System if the RF level is below the defined threshold.

The Technical Concept

All signals are transmitted unidirectional. If applied as a multiplexer, the switch connects the common output port with one of the input ports. All ports are located at the rear side of the instrument. Switching is done with semiconductor switches.

For the DEV 1258/zz and the DEV 12516/zz an amplifier is installed in the switching system to compensate the insertion loss. The selected input is also available at the monitoring port on the front side of the instrument. With these instruments, it can be selected between two different operation modes:

In Normal Operation Mode one of the 8 or 16 inputs will be switched manually to the output. It will be monitored, if the input signal level is above the pre-defined threshold.

In Scan Operation Mode the switching as well as the monitoring of the signal level of all inputs is done sequentially and automatically.

All instruments of this series are delivered in a compact 1 RU chassis, provide redundant power supplies and can be ordered in 50 Ohm with SMA connectors or in 75 Ohm with precision F connectors.

Additionally, DEV offers a series of 3 RU (de-) multiplexers (DEV 101xx and DEV 121xx), if 24 or more ports are required. A series of multiple L Band (de-) multiplexers within one 3 RU chassis is available as well (DEV 1248, DEV 12416, and DEV 12232), please refer to the corresponding data sheets.

Technical Data

DEV 1018/zz / DEV 10116/zz / DEV 1218/zz / DEV 12116/zz (De-) Multiplexer DEV 1258/zz / DEV 12516/zz Active Multiplexer

RF Specifications

Frequency range	47...862 MHz	(DEV 1018/zz, DEV 10116/zz)
	950...2150 MHz	(DEV 12y8/zz, DEV 12y16/zz)
Number of input ports	8	(DEV 1xy8/zz)
	16	(DEV 1xy16/zz)
Number of output ports	1	
Impedance, connectors	50 Ohm, SMA (f)	(DEV 1xy8/50, DEV 1xy16/50)
	75 Ohm, Precision F (f)	(DEV 1xy8/75, DEV 1xy16/75)
Damage level	+15 dBm	
Nominal input level	<+5 dBm	(DEV 1x18/zz, DEV 1x116/zz)
	<0 dBm	(DEV 1258/zz, DEV 12516/zz)
Return loss selected path	>14 dB	(DEV 1x18/zz, DEV 1x116/zz)
	>16 dB	(DEV 1258/zz, DEV 12516/zz)
Return loss not selected path	>21 dB	(DEV 1018/50, DEV 10116/50)
	>18 dB	(DEV 1018/75, DEV 10116/75)
	>14 dB	(DEV 1218/zz, DEV 12116/zz)
	>16 dB	(DEV 1258/zz, DEV 12516/zz)
Return loss output port	>14 dB	
Gain	-5±1 dB	(DEV 1018/zz, DEV 10116/zz)
	-6±1 dB	(DEV 1218/zz, DEV 12116/zz)
	2±2 dB	(DEV 1258/zz, DEV 12516/zz)
Frequency response	±1 dB	
Isolation between input ports	>50 dB	
Relay type	Semiconductor	

RF-Sensing (DEV 1258/zz, DEV 12516/zz)

Adjustable threshold level	-15 dBm > threshold level > -45 dBm
DEV factory setting	-30 dBm

Monitoring Port (DEV 1258/zz, DEV 12516/zz)

Impedance, RF connector	50 Ohm, SMA (f)
Return loss	>14 dB
Insertion loss	= input level -10 dB ±1 dB
Frequency response	±1,5 dB

Remote Communication

Interfaces, connectors	Ethernet, RJ-45; serial interface RS 232 (optional RS 422/RS 485), Sub-D-9 (f).
Remote control & surveillance, interface	<ul style="list-style-type: none"> • via SNMP protocol, Ethernet, • via Sandar Prosan protocol, serial interface.

Technical Data (cont.)**Redundant Power Supply**

Redundant power supplies	100...240 V AC supplied by two different lines
Power consumption	15 VA, max 30 VA

Alarms

Two stage alarm signalisation for power line failure	Potential free contacts
Alarm connector	Sub-D-9 (m)
Contact load	60 V; 0,3 A
B-Alarm	One power supply unit does not deliver any secondary power.
A-Alarm	Both power supply units do not deliver any secondary power.
Summary alarm	Via remote control interfaces & via potential free SPDT contact

General Specifications

Housing	19" (483 mm), 1 RU (44 mm), 260 mm depth
Weight	~5 kg
Environmental conditions	ETS 300019 Part 1-3 Class 3.1

Order Information

DEV 1018/50	8:1 (De-) Multiplexer CATV-Band 50 Ohm SMA (f)
DEV 1018/75	8:1 (De-) Multiplexer CATV-Band 75 Ohm Precision F (f)
DEV 10116/50	16:1 (De-) Multiplexer CATV-Band 50 Ohm SMA (f)
DEV 10116/75	16:1 (De-) Multiplexer CATV-Band 75 Ohm Precision F (f)
DEV 1218/50	8:1 (De-) Multiplexer L-Band 50 Ohm SMA (f)
DEV 1218/75	8:1 (De-) Multiplexer L-Band 75 Ohm Precision F (f)
DEV 12116/50	16:1 (De-) Multiplexer L-Band 50 Ohm SMA (f)
DEV 12116/75	16:1 (De-) Multiplexer L-Band 75 Ohm Precision F (f)
DEV 1258/50	8:1 Active Multiplexer L-Band 50 Ohm SMA (f)
DEV 1258/75	8:1 Active Multiplexer L-Band 75 Ohm Precision F (f)
DEV 12516/50	16:1 Active Multiplexer L-Band 50 Ohm SMA (f)
DEV 12516/75	16:1 Active Multiplexer L-Band 75 Ohm Precision F (f)
Option 01	50 Ohm BNC (f) connectors (for DEV 1018/50 & DEV 10116/50 only)
Option 04	75 Ohm BNC (f) connectors (for DEV 1018/75 & DEV 10116/75 only)
Option 12	24V DC supply voltage
Option 52	RS 422 instead of RS 232
Option 53	RS 485 instead of RS 232

Contact

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