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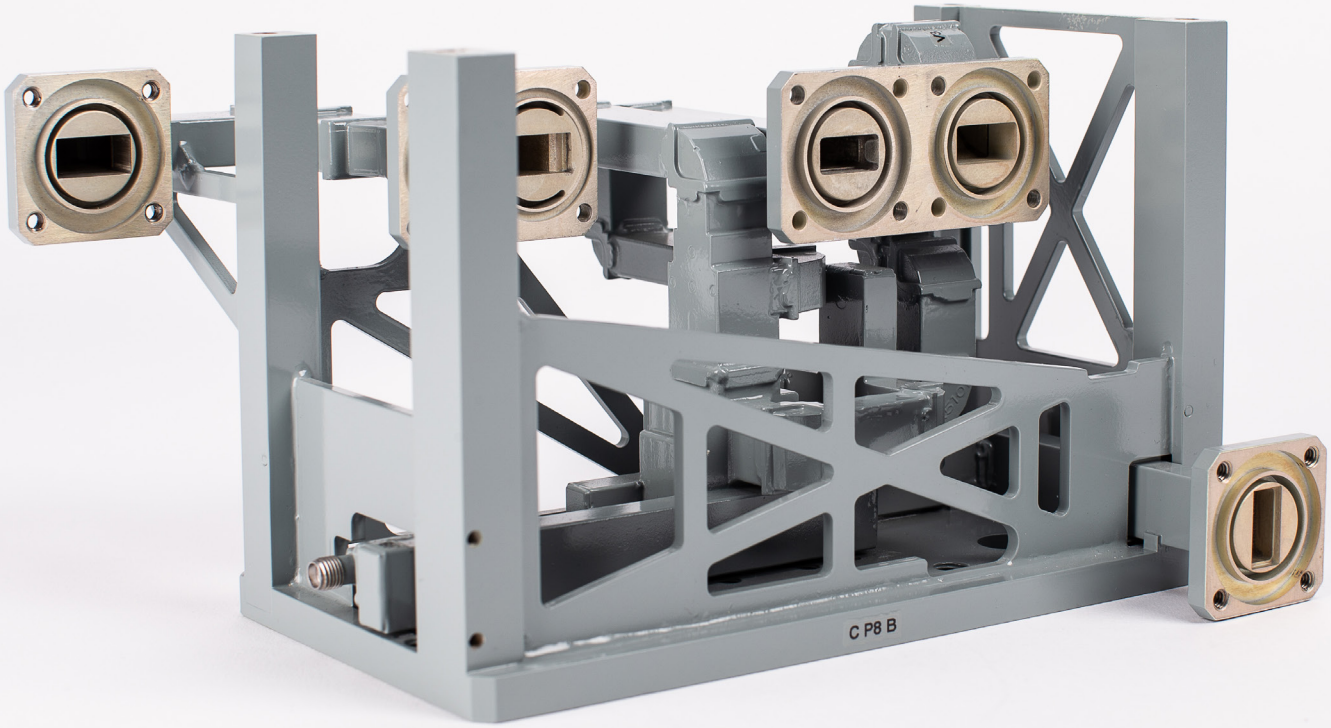

MONOPULSE COMPARATOR DATASHEETS

www.sylatech.com

Table of Contents

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bsi. AS/EN 9100 Series Aerospace

Part Number: GOVIN514

Datasheet 2020 Rev1

WR187 (WG12) Monopulse Comparator

Description

Excellent amplitude, phase unbalance, and deeps nulls. This high-performance 4-port C-band monopulse comparator is constructed from precision investment castings.

Key Features

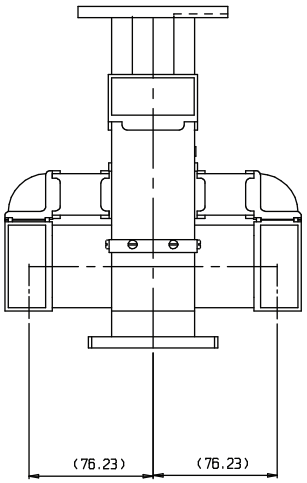
- Compact
- Operates over Full Radar C-band

Typical Applications

- Radar antennas
- Satellite tracking antennas

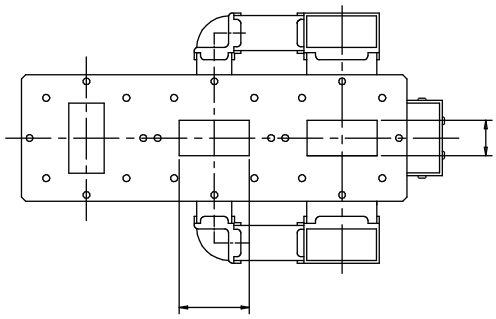
Electrical Specifications

1.1	**Frequency (Passband)**	5.40 - 5.90 GHz
1.2	**Return Loss (SUM)**	20.83 dB min (VSWR 1.2:1)
1.3	**Return Loss (DIFF) Elevation**	20.83 dB min (VSWR 1.2:1)
1.4	**Return Loss (DIFF) Azimuth**	20.83 dB min (VSWR 1.2:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Insertion Loss (SUM)**	0.2 dB typical
1.7	**Insertion Loss (DIFF)**	0.3 dB typical
1.8	**Amplitude Unbalance (SUM)**	0.20 dB max
1.9	**Amplitude Unbalance (DIFF)**	0.20 dB max
1.10	**Phase Unbalance (SUM)**	2° max
1.11	**Phase Unbalance (DIFF)**	2° max
1.12	**Phase Variation with Freq. (SUM & DIFF)**	1° max



Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG149A/U
2.2	**Operating Pressure**	7 PSIG max



Environmental Specifications

3.1	**Operating Temperature**	0 to +55°

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bsi. AS/EN 9100 Series Aerospace

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Part Number: GOVIN510

Datasheet 2020 Rev1

WR112 (WG15) Monopulse Comparator

Description

This high-performance conventional 4-Port X-band monopulse comparator is constructed from precision investment castings. Its low mass and small space envelope make it ideal for operation in airborne environments either military or civilian.

Key Features

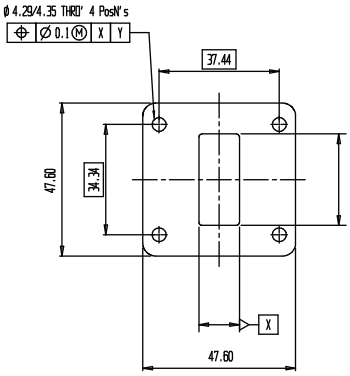
- Compact
- Lightweight
- Operates at X-band
- Deeps nulls

Typical Applications

- Radar antennas
- Satellite tracking antennas

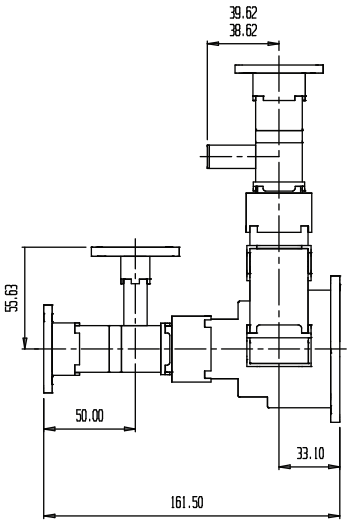
Electrical Specifications

1.1	**Frequency (Passband)**	8.0 - 8.50 GHz
1.2	**Return Loss (SUM)**	20.83 dB min (VSWR 1.2:1)
1.3	**Return Loss (DIFF) Elevation**	20.83 dB min (VSWR 1.2:1)
1.4	**Return Loss (DIFF) Azimuth**	20.83 dB min (VSWR 1.2:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Amplitude Unbalance (SUM)**	0.3 dB max
1.7	**Amplitude Unbalance (DIFF)**	0.4 dB max
1.8	**Phase Unbalance (SUM)**	3.0° max
1.9	**Phase Unbalance (DIFF)**	4.0° max
1.10	**Phase Variation with Freq. (SUM & DIFF)**	1.0° max



Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-51/U
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0 to +55°

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Part Number: MC16001

Datasheet 2020 Rev1

WR90 (WG16) Monopulse Comparator

Description

This high-performance conventional 4-Port X-band monopulse comparator is constructed from precision investment castings. Its low mass and small space envelope make it ideal for operation in airborne environments either military or civilian.

Key Features

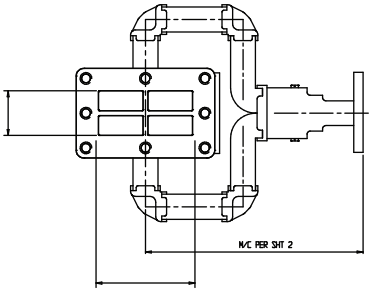
- Compact
- Lightweight
- Operates over Full Radar X-band
- Deeps nulls

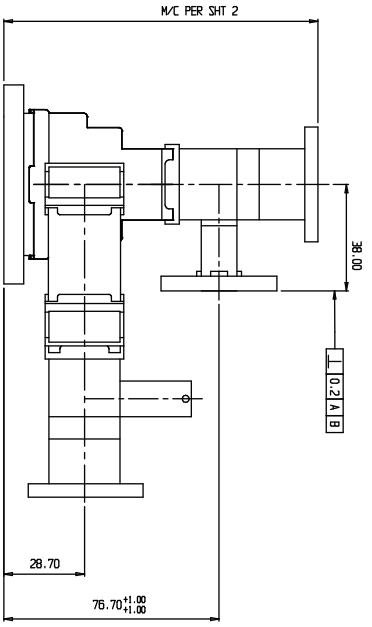
Typical Applications

- Radar antennas
- Satellite tracking antennas

Electrical Specifications

1.1	**Frequency (Passband)**	8.5 - 9.6 GHz
1.2	**Return Loss (SUM)**	23.13 dB min (VSWR 1.15:1)
1.3	**Return Loss (DIFF) Elevation**	19.08 dB min (VSWR 1.25:1)
1.4	**Return Loss (DIFF) Azimuth**	19.08 dB min (VSWR 1.25:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Insertion Loss**	6.3 dB typical
1.7	**Amplitude Unbalance (SUM)**	0.3 dB max
1.8	**Amplitude Unbalance (DIFF)**	0.4 dB max
1.9	**Phase Unbalance (SUM)**	3° max
1.10	**Phase Unbalance (DIFF)**	4° max
1.11	**Phase Variation with Freq. (SUM & DIFF)**	2° max
1.12	**Power Handling**	100kW peak / 1kW mean





Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-39/U
2.2	**Operating Pressure**	20 PSIG

Environmental Specifications

3.1	**Operating Temperature**	-30°C to +70 °C

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Part Number: MC18001

Datasheet 2020 Rev1

WR62 (WG18) Monopulse Comparator

Description

Excellent amplitude and phase unbalance and deeps nulls. This compact high-performance Ku-band monopulse comparator is constructed from precision investment castings.

Key Features

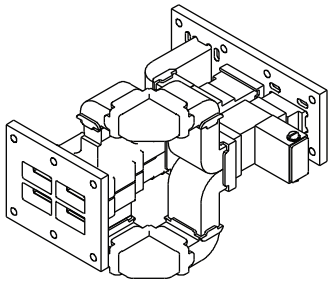
- Compact
- Lightweight
- Operates at Ku-band

Typical Applications

- Satellite tracking antennas
- Satellite communication antennas

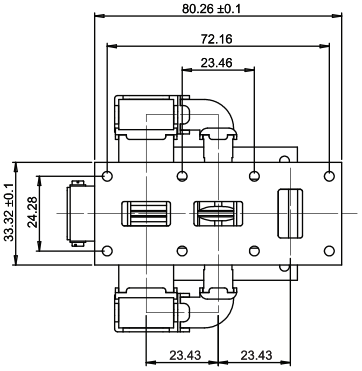
Electrical Specifications

1.1	**Frequency (Passband)**	15.5 - 17.0 GHz
1.2	**Return Loss (SUM)**	19.08 dB min (VSWR 1.25:1)
1.3	**Return Loss (DIFF) Elevation**	16.54 dB min (VSWR 1.35:1)
1.4	**Return Loss (DIFF) Azimuth**	16.54 dB min (VSWR 1.35:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Insertion Loss**	7 dB typical
1.7	**Amplitude Unbalance (SUM)**	0.3 dB max
1.8	**Amplitude Unbalance (DIFF)**	0.4 dB max
1.10	**Phase Unbalance (DIFF)**	3° max
1.9	**Phase Unbalance (SUM)**	3° max
1.10	**Phase Variation with Freq. (SUM & DIFF)**	2° max



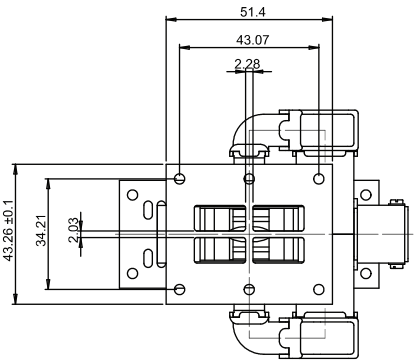
Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-419/U (Triple)
2.2	**Operating Pressure**	40 PSIG



Environmental Specifications

3.1	**Operating Temperature**	-30°C to +70 °C



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Part Number: MC18002

Datasheet 2020 Rev1

WR62 (WG18) Monopulse Comparator

Description

Excellent amplitude and phase unbalance and deeps nulls. This compact high-performance Ku-band 4-Port monopulse comparator is constructed from precision investment castings.

Key Features

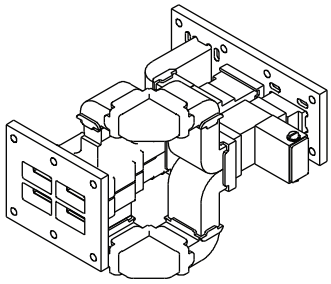
- Compact
- Lightweight
- Operates at Ku-band

Typical Applications

- Satellite tracking antennas
- Satellite communication antennas

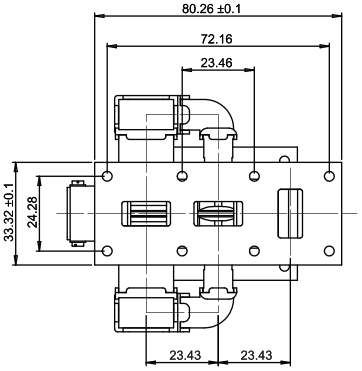
Electrical Specifications

1.1	**Frequency (Passband)**	14.4 - 15.35 GHz
1.2	**Return Loss (SUM)**	19.08 dB min (VSWR 1.25:1)
1.3	**Return Loss (DIFF) Elevation**	16.54 dB min (VSWR 1.35:1)
1.4	**Return Loss (DIFF) Azimuth**	16.54 dB min (VSWR 1.35:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Amplitude Unbalance (SUM)**	0.3 dB max
1.7	**Amplitude Unbalance (DIFF)**	0.3 dB max
1.8	**Phase Unbalance (SUM)**	3° max
1.9	**Phase Unbalance (DIFF)**	3° max
1.10	**Phase Variation with Freq. (SUM & DIFF)**	1° max



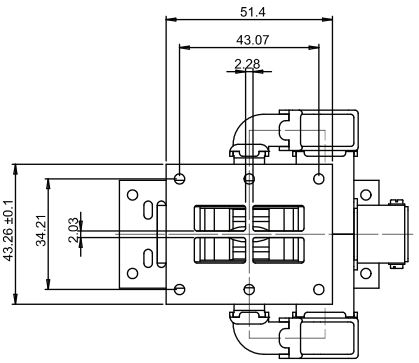
Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-419/U (Triple)
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0° to +55 °C



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Part Number: MC22001

Datasheet 2020 Rev1

WR28 (WG22) Monopulse Comparator

Description

Excellent amplitude and phase unbalance and deeps nulls. This ultra compact high-performance Ka-band 4-port monopulse comparator is constructed from precision investment castings.

Key Features

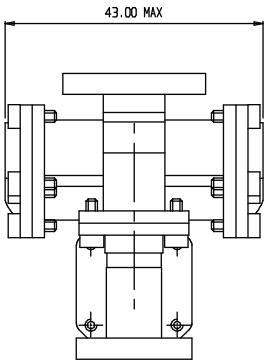
- Compact
- Lightweight
- Operates at Ka-band

Typical Applications

- Radar antennas
- Satellite tracking antennas

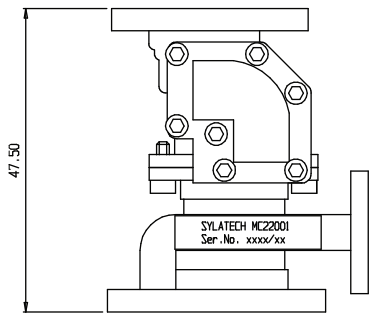
Electrical Specifications

1.1	**Frequency (Passband)**	34.895 - 34.965 GHz
1.2	**Return Loss (SUM)**	17.69 dB min (VSWR 1.30:1)
1.3	**Return Loss (DIFF) Elevation**	13.98 dB min (VSWR 1.50:1)
1.4	**Return Loss (DIFF) Azimuth**	17.69 dB min (VSWR 1.30:1)
1.5	**Isolation SUM to DIFF**	30 dB min
1.6	**Amplitude Unbalance (SUM)**	0.25 dB max
1.7	**Amplitude Unbalance (DIFF)**	0.25 dB max
1.8	**Phase Unbalance (SUM)**	4° max
1.9	**Phase Unbalance (DIFF)**	5° max
1.10	**Phase Variation with Freq. (SUM & DIFF)**	2.5° max



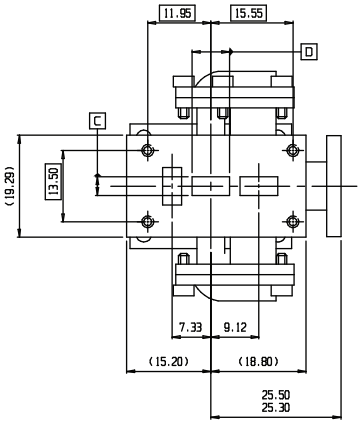
Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-599/U (Triple)
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0° to +55 °C



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bsi. AS/EN 9100 Series Aerospace

Part Number: MC22002

Datasheet 2020 Rev1

WR28 (WG22) Monopulse Comparator

Description

Excellent amplitude and phase unbalance and deeps nulls. This ultra compact high-performance Ka-band 4-Port monopulse comparator is constructed from precision investment castings.

Key Features

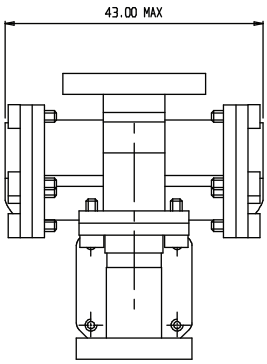
- Compact
- Lightweight
- Operates at Ka-band

Typical Applications

- Satellite tracking antennas
- Satellite communication antennas

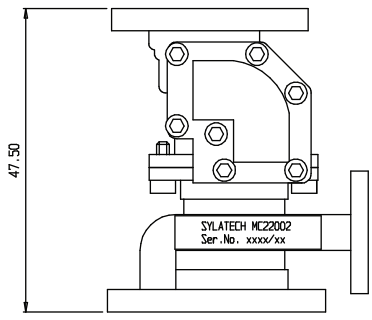
Electrical Specifications

1.1	**Frequency (Passband)**	34.00 - 36.00 GHz
1.2	**Return Loss (SUM)**	17.69 dB min (VSWR 1.30:1)
1.3	**Return Loss (DIFF) Elevation**	13.98 dB min (VSWR 1.50:1)
1.4	**Return Loss (DIFF) Azimuth**	17.69 dB min (VSWR 1.30:1)
1.5	**Isolation SUM to DIFF**	30 dB min
1.6	**Amplitude Unbalance (SUM)**	0.25 dB max
1.7	**Amplitude Unbalance (DIFF)**	0.25 dB max
1.8	**Phase Unbalance (SUM)**	4° max
1.9	**Phase Unbalance (DIFF)**	5° max
1.10	**Phase Variation with Freq. (SUM & DIFF)**	2.5° max



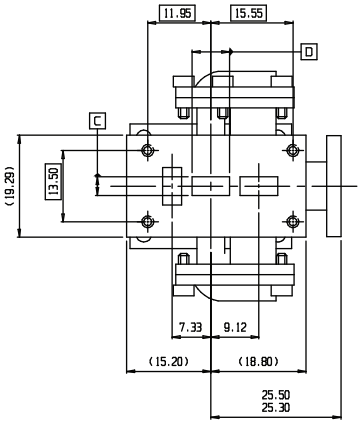
Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-599/U (Triple)
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0° to +55 °C



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bsi. AS/EN 9100 Series Aerospace

Part Number: MC22004

Datasheet 2020 Rev1

WR28 (WG22) Monopulse Comparator

Description

Excellent amplitude and phase unbalance and deeps nulls. This ultra compact high-performance Ka-band 4-Port monopulse comparator is constructed from precision investment castings.

Key Features

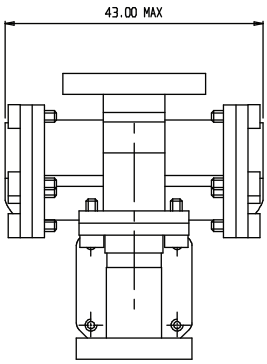
- Compact
- Lightweight
- Operates at Ka-band

Typical Applications

- Satellite tracking antennas
- Satellite communication antennas

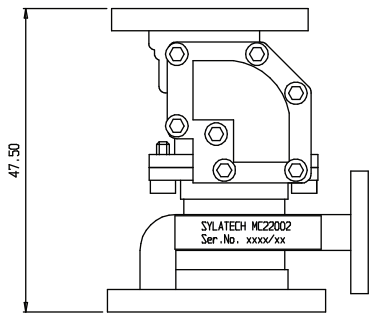
Electrical Specifications

1.1	**Frequency (Passband)**	36.00 - 37.00 GHz
1.2	**Return Loss (SUM)**	19.08 dB min (VSWR 1.25:1)
1.3	**Return Loss (DIFF) Elevation**	14.72 dB min (VSWR 1.45:1)
1.4	**Return Loss (DIFF) Azimuth**	20.83 dB min (VSWR 1.20:1)
1.5	**Isolation SUM to DIFF Elevation**	30 dB min
1.6	**Isolation SUM to DIFF Azimuth**	29.4 dB min
1.7	**Amplitude Unbalance (SUM)**	0.30 dB max
1.8	**Amplitude Unbalance (DIFF)**	0.30 dB max
1.9	**Phase Unbalance (SUM)**	4.° max
1.10	**Phase Unbalance (DIFF)**	5° max
1.11	**Phase Variation with Freq. (SUM & DIFF)**	2.5° max



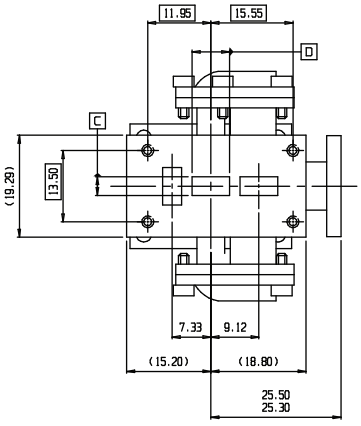
Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-599/U (Triple)
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0° to +55 °C



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bsi. AS/EN 9100 Series Aerospace

Part Number: MC22005

Datasheet 2020 Rev1

WR28 (WG22) Monopulse Comparator

Description

This ultra-compact, high-performance Ka-band monopulse comparator is constructed from precision investment castings. Its low mass and small space envelope make it ideal for operation in airborne environments either military or civilian.

Key Features

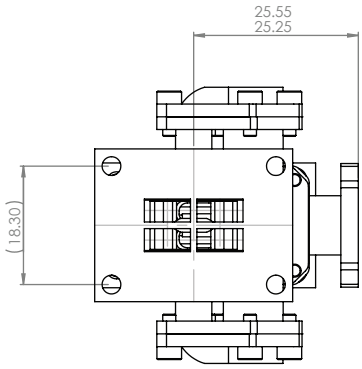
- Compact
- Lightweight
- Operates at Ka-band
- Deeps nulls

Typical Applications

- Airborne radar antennas
- Satellite tracking antennas

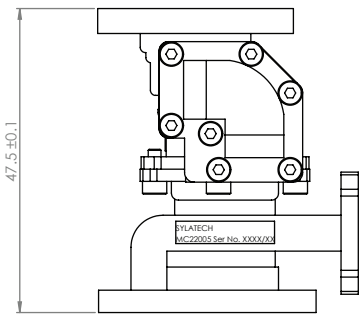
Electrical Specifications

1.1	**Frequency (Passband)**	34.00 - 36.50 GHz
1.2	**Return Loss (SUM)**	17.69 dB min (VSWR 1.30:1)
1.3	**Return Loss (DIFF) Elevation**	13.98 dB min (VSWR 1.50:1)
1.4	**Return Loss (DIFF) Azimuth**	17.69 dB min (VSWR 1.30:1)
1.5	**Isolation SUM to DIFF Elevation**	30 dB min
1.6	**Isolation SUM to DIFF Azimuth**	29 dB min
1.7	**Amplitude Unbalance (SUM)**	0.30 dB max
1.8	**Amplitude Unbalance (DIFF)**	0.30 dB max
1.9	**Phase Unbalance (SUM)**	4° max
1.10	**Phase Unbalance (DIFF)**	5° max
1.11	**Phase Variation with Freq.**	2.5° max



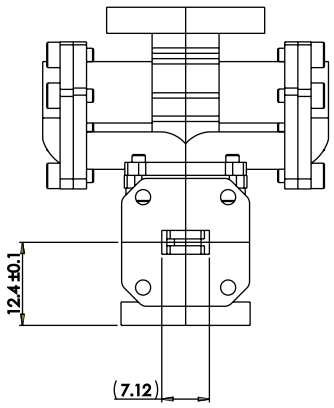
Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-599/U (Triple)
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0 to +55 °C



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bsi. AS/EN 9100 Series Aerospace

Part Number: MC22006

Datasheet 2020 Rev1

WR28 (WG22) Monopulse Comparator

Description

Dual 4-Port Ka-band comparators with optional phase shifters on each of the 6 SUM & DIFF channels. Custom designed by Sylatech as a compact, lightweight high performing comparator ideal for operation in either military or civilian environments. Excellent amplitude, phase unbalance, and deeps nulls.

Key Features

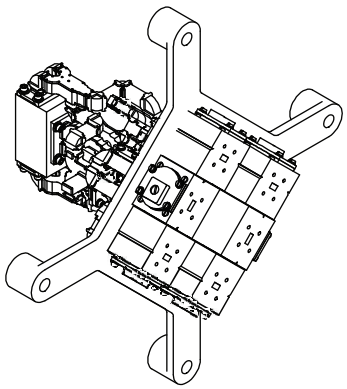
- Operates at Ka-band
- Two Comparators in one assembly
- Dual Orthogonal Linear Polarisation
- Suitable for Circular Polarisation with additional OMTs

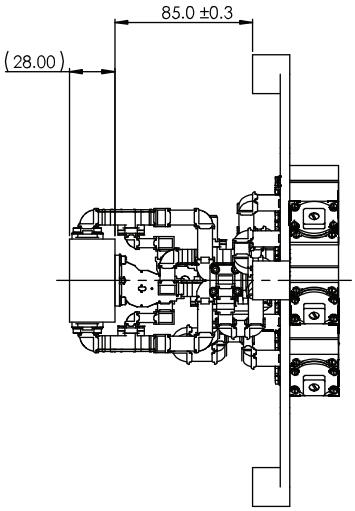
Typical Applications

- Radar antennas
- Satellite tracking antennas

Electrical Specifications

1.1	**Frequency (Passband)**	29 - 31 GHz
1.2	**Return Loss (SUM)**	16.54 dB min (VSWR 1.35:1)
1.3	**Return Loss (DIFF) Elevation**	13.98 dB min (VSWR 1.5:1)
1.4	**Return Loss (DIFF) Azimuth**	13.98 dB min (VSWR 1.5:1)
1.5	**Isolation SUM to DIFF**	30 dB min
1.6	**Insertion Loss**	0.9 dB max
1.7	**Amplitude Unbalance (SUM)**	0.4 dB max
1.8	**Amplitude Unbalance (DIFF)**	0.4 dB max
1.9	**Phase Unbalance (SUM)**	4° max
1.10	**Phase Unbalance (DIFF)**	4° max
1.11	**Phase Variation with Freq. (SUM & DIFF)**	4° max
1.12	**Null Depth**	30 dB





Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-599/U
2.2	**Operating Pressure**	7 PSIG min

Environmental Specifications

3.1	**Operating Temperature**	0 to +55°C

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bsi. AS/EN 9100 Series Aerospace

Part Number: MC20001

Datasheet 2020 Rev1

WR90 (WG16) Monopulse Comparator

Description

This high-performance conventional 4-Port K-band monopulse comparator is constructed from precision machined components. This produces excellent amplitude and phase unbalance and deeps nulls.

Key Features

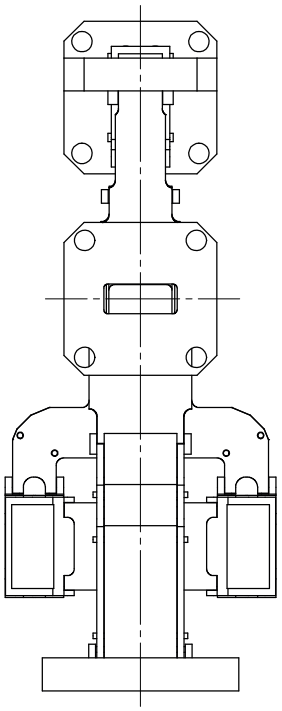
- Compact
- Operates at K-band

Typical Applications

- Radar antennas
- Satellite tracking antennas

Electrical Specifications

1.1	**Frequency (Passband)**	20.2 - 21.2 GHz
1.2	**Return Loss (SUM)**	23.13 dB min (VSWR 1.15:1)
1.3	**Return Loss (DIFF) Elevation**	19.08 dB min (VSWR 1.25:1)
1.4	**Return Loss (DIFF) Azimuth**	19.08 dB min (VSWR 1.25:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Amplitude Unbalance (SUM)**	0.25 dB max
1.7	**Amplitude Unbalance (DIFF)**	0.25 dB max
1.8	**Phase Unbalance (SUM)**	4° max
1.9	**Phase Unbalance (DIFF)**	4° max
1.10	**Phase Variation with Freq. (SUM & DIFF)**	2° max

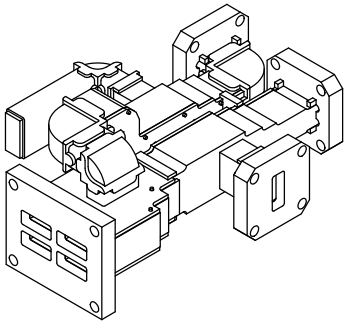


Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-595/U
2.2	**Operating Pressure**	7 PSIG min

Environmental Specifications

3.1	**Operating Temperature**	-30°C to +70 °C



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bsi. AS/EN 9100 Series Aerospace

Part Number: CSIR501

Datasheet 2020 Rev1

WR90 (WG16) Monopulse Comparator

Description

This high-performance conventional 4-Port X-band monopulse comparator is constructed from precision investment castings. It uses only H-Plane Tees which results in a wider operating bandwidth and slightly larger overall dimensions.

Key Features

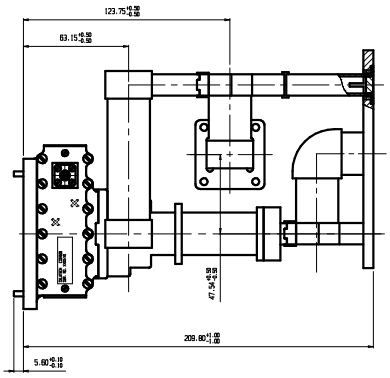
- Compact
- Deeps nulls
- Operates over width bandwidth

Typical Applications

- Radar antennas
- Satellite tracking antennas

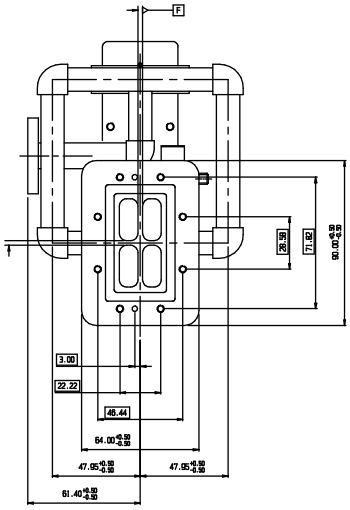
Electrical Specifications

1.1	**Frequency (Passband)**	8.5 - 10.5 GHz
1.2	**Return Loss (SUM)**	13 dB min (VSWR 1.58:1)
1.3	**Return Loss (DIFF) Elevation**	13 dB min (VSWR 1.58:1)
1.4	**Return Loss (DIFF) Azimuth**	13 dB min (VSWR 1.58:1)
1.5	**Isolation SUM to DIFF**	35 dB min
1.6	**Insertion Loss**	0.7 dB typical value
1.7	**Amplitude Unbalance (SUM)**	0.3 dB max
1.8	**Amplitude Unbalance (DIFF)**	0.4 dB max
1.9	**Phase Unbalance (SUM)**	2° max
1.10	**Phase Unbalance (DIFF)**	2° max



Mechanical Specifications

2.1	**Flange Compatibility (SUM & DIFF)**	UG-39/U
2.2	**Operating Pressure**	7 PSIG



Environmental Specifications

3.1	**Operating Temperature**	0 to +55 °C

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