New Product!

Plug-in type compact signal converter

watanabe
Leading company of measuring instruments

WSPF series

High Performance!
Low Price!

±10%
Wide zero & span adjustment

15 Turn
Trimmer for fine zero & span adjustment

5 Years
Long warranty & long life

3 kV
High dielectric strength

DC30V
Power supply compatible

*Can be used for Automotive bateries which has wide voltage variation

watanabe
Manufacturer specializing in Converters
Long term stable supply!

Long life! High reliability!
Plug-in type compact signal converter

WSPF Series 13 Models Lineup

Isolator

	Isolator	Isolator	Dual-output Isolator
Model code	WSPF-IS	WSPF-DS	WSPF-DSW
Input signal	DC current / voltage (Process signal)	DC current / voltage	
Accuracy	±0.1% FS (at 23°C)		
Response time	Approx. 25ms (0 to 90%)		
Isolation	Between input, output, and power supply		
Power supply	100 to 240Vac ±10% 50/60Hz, 24Vdc ±10% 10.8 to 30Vdc, 110Vdc ±10%		
Insulation resistance	100MΩ or more with 500Vdc megger		
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal		
Operating temperature & relative humidity	-5 to +55°C, 90% or less (Non-condensing)		
Dimensions	84(H) X 23(W) X 106.5(D)mm		84(H) X 29.5(W) X 106.5(D)mm

	High-speed Response Isolator	Dual-output High-speed Response Isolator
Model code	WSPF-DE	WSPF-DEW
Input signal	DC current / voltage	
Accuracy	±0.1% FS (at 23°C)	
Response time	Approx. 120μs (0 to 90%)	
Isolation	Between input, output, and power supply	
Power supply	100 to 240Vac ±10% 50/60Hz, 24Vdc ±10% 10.8 to 30Vdc, 110Vdc ±10%	
Insulation resistance	100MΩ or more with 500Vdc megger	
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal	
Operating temperature & relative humidity	-5 to +55°C, 90% or less (Non-condensing)	
Dimensions	84(H) X 23(W) X 106.5(D)mm	84(H) X 29.5(W) X 106.5(D)mm

Distributor (Current Loop Supply)

	Distributor (Current Loop Supply)	Dual-output Distributor (Current Loop Supply)
Model code	WSPF-DBZ	WSPF-DBZW
Input signal	4 to 20mAdc (Transmitter signal)	
Accuracy	±0.1% FS (at 23°C)	
Response time	Approx. 25ms (0 to 90%)	
Transmitter power supply	24Vdc ±1V, max approx. 25mA	

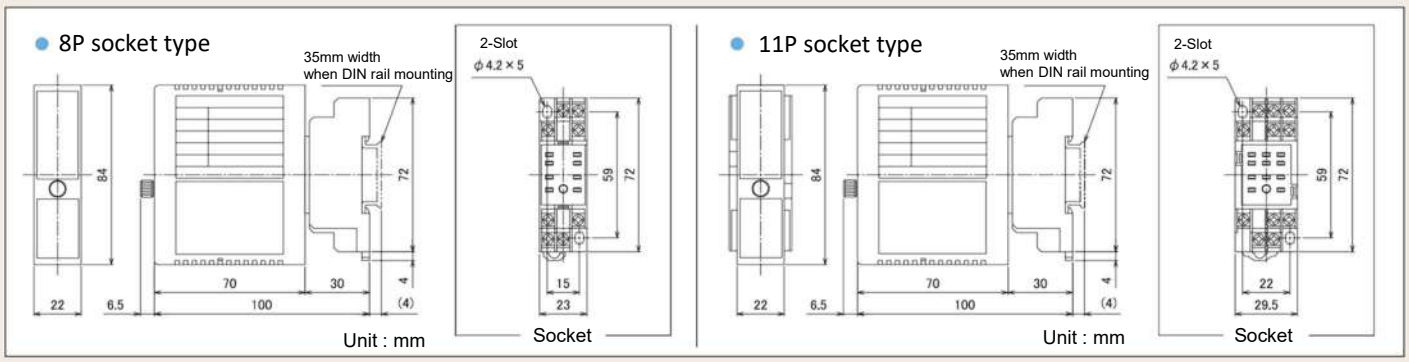
Temperature signal converter

	Thermocouple Converter	Dual-output Thermocouple Converter	RTD Converter	Dual-output RTD Converter
Model code	WSPF-THS	WSPF-THW	WSPF-RTS	WSPF-RTW
Input signal	Thermocouple (T / E / J / K / N / R / S / B / WRe5-26)		Pt100Ω, JPt100Ω, Ni508.4Ω (3-wire)	
Accuracy	±0.2% FS (at 23°C)		±0.1% FS (at 23°C)	
Response time	Approx. 25ms (0 to 90%)		Approx. 25ms (0 to 90%)	
Burnout protection	Upscale / downscale		Upscale / downscale	
Cold junction compensating Accuracy	±0.5°C or less at 23±10°C (±1°C or less for R, WR and S)		-	

Potentiometer converter

	Potentiometer Converter	Dual-output Potentiometer Converter
Model code	WSPF-MS	WSPF-MSW
Input signal	3-wire type potensiometer	
Accuracy	±0.1% FS (at 23°C)	
Response time	Approx. 25ms (0 to 90%)	
Burnout protection	Upscale / downscale	

Dimensions



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Please contact our distributor about the product

*Specification is subject to change without notice

WSPF Series Catalog List

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Isolator

WSPF-IS

This compact plug-in type converter (isolator) provides signal output which is mutually isolated between input, output and power-supply.
It amplifies and converts various kinds of signal with isolation to use in the integrated instrumental control system. It is highly effective as noise countermeasures.

Features

★ Fine zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ Compatible with 30Vdc power supply voltage
★ 5 years warranty, long life
★ CE approved

Ordering code

WSPF- I S - □□ □ - □□

Code	Input	Input Resistance
14	1 to 5Vdc	1MΩ
15	0 to 10Vdc	1MΩ
36	4 to 20mAdc	50Ω

Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
＊1	10.8 to 30Vdc
8	110Vdc ±10%

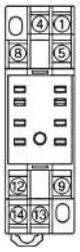
Code	Test Report
X	None
T	With Test report

＊1･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

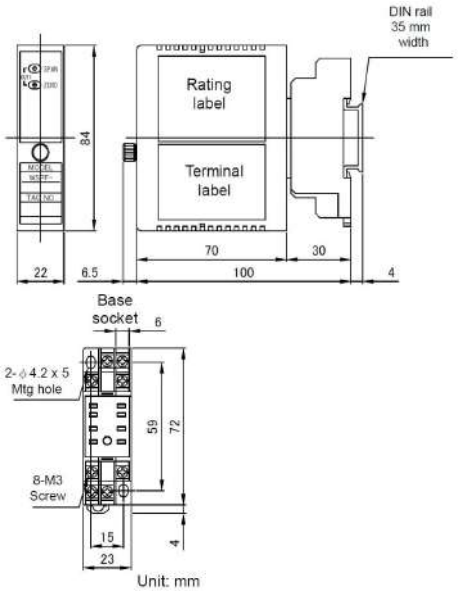
Input signal	DC current / voltage
Output signal	DC current / voltage
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output 15V or less of voltage drop between output terminal Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature range	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Storage temperature range	-10 to +60°C
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	Approx. 4.5VA (AC), Approx. 60mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 23(W) X 106.5(D)mm
Weight	Approx. 130g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
4		-	
5	NC		No connection
8	NC		No connection
9	OUTPUT	+	Output
12		-	
13	POWER	U(+)	Power Supply
14		V(-)	

Demensions



＊ Specification is subject to change without notice

Isolator

WSPF-DS

This compact plug-in type converter (isolator) provides signal output which is mutually isolated between input, output and power-supply.
It amplifies and converts various kinds of signal with isolation to use in the integrated instrumental control system. It is highly effective as noise countermeasures.

Features

★ Fine zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ Compatible with 30Vdc power supply voltage
★ 5 years warranty, long life
★ CE approved

Ordering code

WSPF- D S - □□ □ - □□

Code	Input	Input Resistance
12	0 to 1Vdc	1MΩ
13	0 to 5Vdc	1MΩ
14	1 to 5Vdc	1MΩ
15	0 to 10Vdc	1MΩ
24	±5Vdc	1MΩ
25	±10Vdc	1MΩ
32	0 to 1mAdc	100Ω
33	0 to 10mAdc	50Ω
35	0 to 20mAdc	50Ω
36	4 to 20mAdc	50Ω
40	±1mAdc	100Ω
41	±20mAdc	50Ω
99 ＊1	Contact us for other than the above Current input : ±20mA, Span : 1mA to 40mA Voltage input : ±300V, Span : 60mV to 600V	

Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Test Report
X	None
T	With Test report

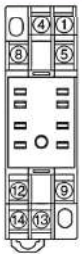
Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D ＊2	24Vdc ±10% 10.8 to 30Vdc
8	110Vdc ±10%

＊1･･･CE approval do not adapt input range code 99 and output range code S.
＊2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

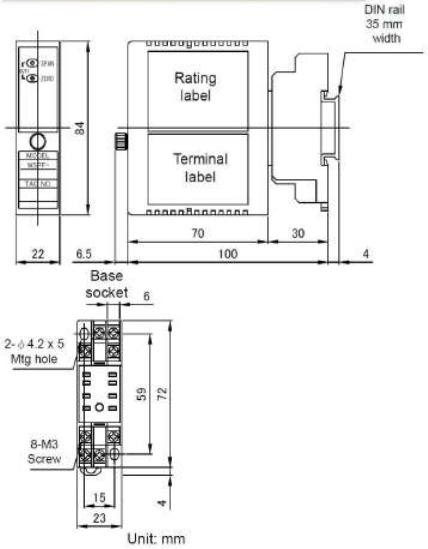
Input signal	DC current / voltage
Output signal	DC current / voltage
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output 15V or less of voltage drop between output terminal Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature range	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Storage temperature range	-10 to +60°C
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	Approx. 4.5VA (AC), Approx. 60mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 23(W) X 106.5(D)mm
Weight	Approx. 130g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
4		-	
5	NC		No connection
8	NC		No connection
9	OUTPUT	+	Output
12		-	
13	POWER	U(+)	Power Supply
14		V(-)	

Demensions



＊ Specification is subject to change without notice

Dual-output Isolator

WSPF-DSW

This compact plug-in type converter (isolator) provides 2 signal outputs which are mutually isolated between input, output and power-supply.
It amplifies and converts various kinds of signal with isolation to use in the integrated instrumental control system. It is highly effective as noise countermeasures.

Features

★ Fine zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ Compatible with 30Vdc power supply voltage
★ 5 years warranty, long life
★ CE approved

Ordering code

WSPF- D S W - □□ □ □ - □□

Code	Input	Input Resistance
12	0 to 1Vdc	1MΩ
13	0 to 5Vdc	1MΩ
14	1 to 5Vdc	1MΩ
15	0 to 10Vdc	1MΩ
24	±5Vdc	1MΩ
25	±10Vdc	1MΩ
32	0 to 1mAdc	100Ω
33	0 to 10mAdc	50Ω
35	0 to 20mAdc	50Ω
36	4 to 20mAdc	50Ω
40	±1mAdc	100Ω
41	±20mAdc	50Ω
99 *1	Contact us for other than the above Current input : ±20mA, Span : 1mA to 40mA Voltage input : ±300V, Span : 60mV to 600V	

Code	Output 1	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S *1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Test Report
X	None
T	With Test report

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
*2	10.8 to 30Vdc
8	110Vdc ±10%

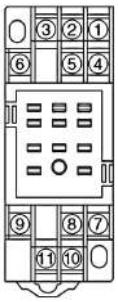
Code	Output 2	Allowable Load Resistance
A	4 to 20mAdc	550Ω or less
D	0 to 1mAdc	11kΩ or less
G	0 to 20mAdc	550Ω or less
H	1 to 5Vdc	1kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S *1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

*1･･･CE approval do not adapt input range code 99 and output range code S.
*2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

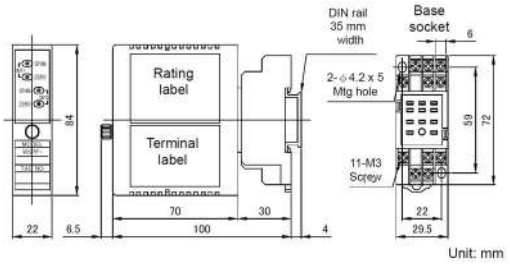
Input signal	DC current / voltage
Output signal	DC current / voltage (2 output)
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output Output 1 : 15V or less of voltage drop between output Output 2 : 7V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature range	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Storage temperature range	-10 to +60°C
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	Approx. 4.5VA (AC), Approx. 100mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
2	No.2 OUTPUT	+	No.2 Output
3	INPUT	-	Input
4	NC		No connection
5	No.2 OUTPUT	-	No.2 Output
6	NC		No connection
7	No.1 OUTPUT	+	No.1 Output
8	NC		No connection
9	No.1 OUTPUT	-	No.1 Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



* Specification is subject to change without notice

High-speed Response Isolator

WSPF-DE

This compact plug-in, high-speed response type converter (isolator) provides signal output which is mutually isolated between input, output and power-supply. It amplifies and converts various kinds of signal with isolation to use in the integrated instrumental control system. It is highly effective as noise countermeasures.

Features

★ High-speed response time 120μs
★ Fine zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ Compatible with 30Vdc power supply voltage
★ 5 years warranty, long life
★ CE approved

Ordering code

WSPF- D E - □□ □ - □□

Code	Input	Input Resistance
12	0 to 1Vdc	1MΩ
13	0 to 5Vdc	1MΩ
14	1 to 5Vdc	1MΩ
15	0 to 10Vdc	1MΩ
24	±5Vdc	1MΩ
25	±10Vdc	1MΩ
32	0 to 1mAdc	100Ω
33	0 to 10mAdc	50Ω
35	0 to 20mAdc	50Ω
36	4 to 20mAdc	50Ω
40	±1mAdc	100Ω
41	±20mAdc	50Ω
99 *1	Contact us for other than the above Current input : ±20mA, Span : 1mA to 40mA Voltage input : ±300V, Span : 60mV to 600V	

Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S *1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Test Report
X	None
T	With Test report

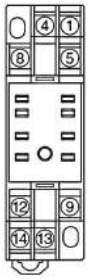
Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D *2	24Vdc ±10%
8	110Vdc ±10%

*1･･･CE approval do not adapt input range code 99 and output range code S.
*2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

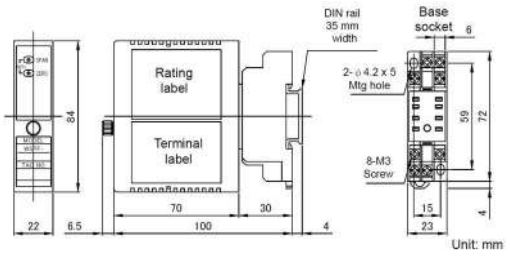
Input signal	DC current / voltage
Output signal	DC current / voltage
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 120μs (0 to 90%)
Frequency response	Approx. 3.3kHz or more (Sine wave input : -3dB)
Allowable load	Current output 15V or less of voltage drop between output terminal Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature range	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Storage temperature range	-10 to +60°C
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	Approx. 4.5VA (AC), Approx. 60mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 23(W) X 106.5(D)mm
Weight	Approx. 130g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
4		-	
5	NC		No connection
8	NC		No connection
9	OUTPUT	+	Output
12		-	
13	POWER	U(+)	Power Supply
14		V(-)	

Demensions



∗ Specification is subject to change without notice

Dual-output High-speed Response Isolator WSPF-DEW

This compact plug-in, high-speed response type converter (isolator) provides 2 signal outputs which are mutually isolated between input, output and power-supply. It amplifies and converts various kinds of signal with isolation to use in the integrated instrumental control system. It is highly effective as noise countermeasures.

Features

★ High-speed response time 120μs
★ Fine zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ Compatible with 30Vdc power supply voltage
★ 5 years warranty, long life
★ CE approved

Ordering code

WSPF- D E W - □□ □ □ - □□

Code	Input	Input Resistance
12	0 to 1Vdc	1MΩ
13	0 to 5Vdc	1MΩ
14	1 to 5Vdc	1MΩ
15	0 to 10Vdc	1MΩ
24	±5Vdc	1MΩ
25	±10Vdc	1MΩ
32	0 to 1mAdc	100Ω
33	0 to 10mAdc	50Ω
35	0 to 20mAdc	50Ω
36	4 to 20mAdc	50Ω
40	±1mAdc	100Ω
41	±20mAdc	50Ω
99 *1	Contact us for other than the above Current input : ±20mA, Span : 1mA to 40mA Voltage input : ±300V, Span : 60mV to 600V	

Code	Output 1	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S *1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Test Report
X	None
T	With Test report

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
*2	10.8 to 30Vdc
8	110Vdc ±10%

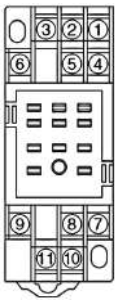
Code	Output 2	Allowable Load Resistance
A	4 to 20mAdc	550Ω or less
D	0 to 1mAdc	11kΩ or less
G	0 to 20mAdc	550Ω or less
H	1 to 5Vdc	1kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S *1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

*1･･･CE approval do not adapt input range code 99 and output range code S.
*2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

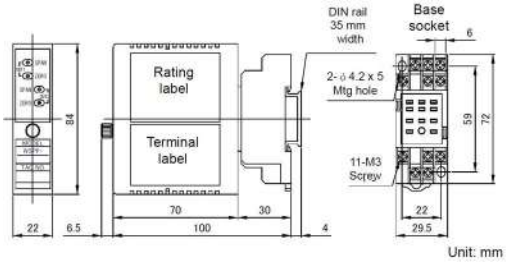
Input signal	DC current / voltage
Output signal	DC current / voltage (2 output)
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 120μs (0 to 90%)
Frequency response	Approx. 3.3kHz or more (Sine wave input : -3dB)
Allowable load	Current output Output 1 : 15V or less of voltage drop between output Output 2 : 7V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature range	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Storage temperature range	-10 to +60°C
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	Approx. 4.5VA (AC), Approx. 100mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
2	No.2 OUTPUT	+	No.2 Output
3	INPUT	-	Input
4	NC		No connection
5	No.2 OUTPUT	-	No.2 Output
6	NC		No connection
7	No.1 OUTPUT	+	No.1 Output
8	NC		No connection
9	No.1 OUTPUT	-	No.1 Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



* Specification is subject to change without notice

Distributor (Current Loop Supply)

WSPF-DBZ

The plug-in distributor (Current loop supply) provides isolated signal output, which can be used in combination with a transmitter.
It supplies DC power to a field transmitter, and converts 4-20mA signal transmitted to the suitable signal for input of monitoring and control equipment.

Features

★ Fine Zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Can be used as Isolator

Ordering code

WSPF- D B Z - □□ - □□

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
＊1	21.6 to 30Vdc
8	110Vdc ±10%

Code	Transmitter power supply
A	24Vdc ±1V Max approx. 25mA
C	30Vdc ±1V Max approx. 22mA

Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S ＊2	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

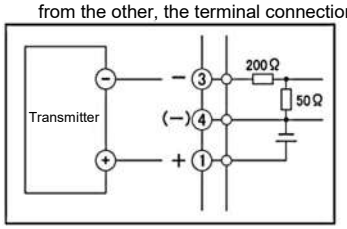
Code	Test Report
X	None
T	With Test report

＊1･･･CE approval do not adapt when power supply is 21.6Vdc to 30Vdc.

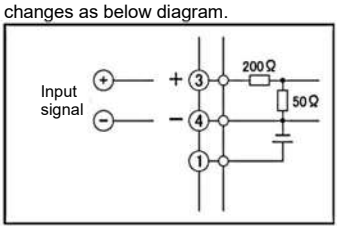
＊2･･･CE approval do not adapt output range code S.

<Precautions for wiring>

Please note that when using as isolator, or when transmitter power supplies from the other, the terminal connection changes as below diagram.



★ Normal connection of distibuter

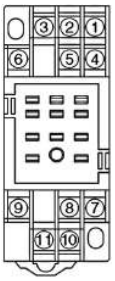


★ The connection for using as isolator or when transmitter power supplies from the other

Specifications

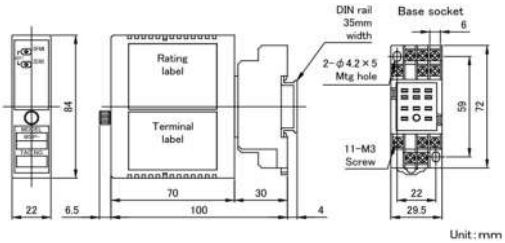
Input Signal	4-20mAdc (Transmitter signal) (Input resistance 250Ω)
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output 15V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Transmitter power supply	Model code [A] : 24Vdc ±1V, max approx. 25mA Model code [C] : 30Vdc ±1V, max approx. 22mA
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	24V Transmitter power supply : Approx. 5.2VA (AC), Approx. 90mA (DC) 30V Transmitter power supply : Approx. 5.4VA (AC), Approx. 95mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	TRANSMITTER	+	Transmitter
2	NC		No connection
3	TRANSMITTER	-	Transmitter
4	COM	-	(Adjusting terminal)
5	NC		No connection
6	NC		No connection
7	OUTPUT-1	+	Output
8	NC		No connection
9	OUTPUT-1	-	Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



＊ Specification is subject to change without notice

Dual-output Distributor (Current Loop Supply) WSPF-DBZW

The plug-in distributor (Current loop supply) provides isolated 2 signal outputs, which can be used in combination with a transmitter.
It supplies DC power to a field transmitter, and converts 4-20mA signal transmitted to the suitable signal for input of monitoring and control equipment.

Features

★ Fine Zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Can be used as Dual-output Isolator

Ordering code

WSPF- D B Z W - □ □ □ - □ □

Code	Transmitter power supply
A	24Vdc ±1V Max approx. 25mA

Code	Test Report
X	None
T	With Test report

Code	Output 1	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more

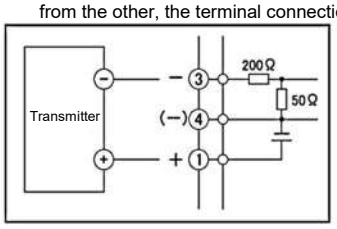
Code	Output 2	Allowable Load Resistance
A	4 to 20mAdc	350Ω or less
H	1 to 5Vdc	1kΩ or more

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
＊1	21.6 to 30Vdc
8	110Vdc ±10%

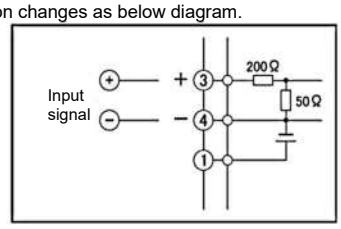
＊1･･･CE approval do not adapt when power supply is 21.6Vdc to 30Vdc.

<Precautions for wiring>

Please note that when using as isolator, or when transmitter power supplies from the other, the terminal connection changes as below diagram.



★ Normal connection of distibuter

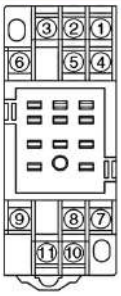


★ The connection for using as isolator or when transmitter power supplies from the other

Specifications

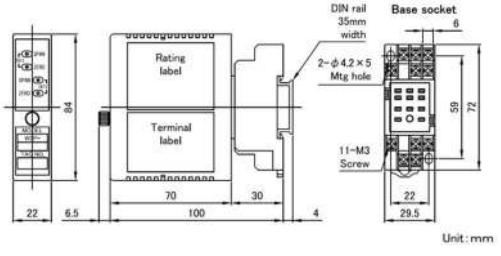
Input Signal	4-20mAdc (Transmitter signal) (Input resistance 250Ω)
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output First output : 15V or less of voltage drop between output Second output : 7V or less of voltage drop between output Voltage output Load current 5mA or less
Zero & span adjustment	±10% FS (15 turn trimmer)
Transmitter power supply	24Vdc ±1V, max approx. 25mA
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 minute between power supply and input/output terminal, 2000Vac for 1 minute between input and output terminal
Power consumption	Approx. 5.7VA (AC), Approx. 100mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	TRANSMITTER	+	Transmitter
2	OUTPUT-2	+	No.2 Output
3	TRANSMITTER	-	Transmitter
4	COM	-	(Adjusting terminal)
5	OUTPUT-2	-	No.2 Output
6	NC		No connection
7	OUTPUT-1	+	No.1 Output
8	NC		No connection
9	OUTPUT-1	-	No.1 Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



＊ Specification is subject to change without notice

Thermocouple Converter

WSPF-THS

This compact plug-in converter accepts Thermocouples signal input conforming to JIS standard and provides optically isolated DC voltage or current output.
This converter has a linearizer, a cold junction compensation circuit, and a burnout protection circuit as standard equipment which is required to measure temperature.

Features

★ Fine Zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Linearizer, Cold junction compensation circuit, and Burnout protection circuit built-in

Ordering code

WSPF- T H S - □ □ □ □ - □ □

Code	Input Signal
T	T (CC) thermocouple
E	E (CRC) thermocouple
J	J (IC) thermocouple
K	K (CA) thermocouple
N	N thermocouple
R	R (PR13) thermocouple
S	S thermocouple
B	B thermocouple
W	WRe 5-26

Measuring Temperature Range	Code	Manufacturable Range by Thermocouple								
		T	E	J	K	N	R	S	B	W
0 to 100°C	08	○	○	○	○					
0 to 150°C	09	○	○	○	○	○				
0 to 200°C	10	○	○	○	○	○				
0 to 250°C	11	○	○	○	○	○				
0 to 300°C	12	○	○	○	○	○				
0 to 400°C	13		○	○	○	○	○	○		
0 to 500°C	14		○	○	○	○	○	○		
0 to 600°C	15		○	○	○	○	○	○	○	○
0 to 800°C	16				○	○	○	○	○	○
0 to 1000°C	17				○	○	○	○	○	○
0 to 1200°C	18				○	○	○	○	○	○
0 to 1300°C	19						○	○	○	○
0 to 1400°C	20						○	○	○	○
0 to 1600°C	21						○	○	○	○
0 to 1800°C	22								○	○
0 to 2000°C	23									○
0 to 2300°C	24									○
Other than above	99 *1	Contact us								

Code	Test Report
X	None
T	With Test report

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
*2	10.8 to 30Vdc
8	110Vdc ±10%

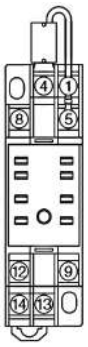
Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S *1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

*1･･･CE approval do not adapt input range code 99 and output range code S.
*2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

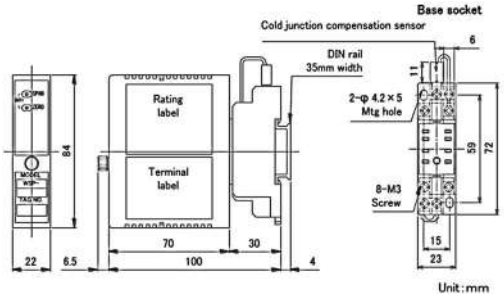
Accuracy	±0.2% FS (at 23±10°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output 15V or less of voltage drop Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Cold junction compensation Accuracy	±0.5°C or less at 23±10°C (±1°C or less for R, WR and S)
Cold junction compensation Temperature	10 to 40°C *R, S, WR thermocouple : ±1°C
Linearization	Available (30% FS or less of R and W is out of range)
Burnout protection	Upscale / downscale *Please specify when you order for downscale
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 min between power supply and input/output terminal, 2000Vac for 1 min between input and output terminal
Power consumption	Approx. 4.4VA (AC), Approx. 63mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 23(W) X 106.5(D)mm
Weight	Approx. 130g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
4		-	
5	CJC		Cold junction compensation
8	NC		No connection
9	OUTPUT-1	+	Output
12		-	
13	POWER	U(+)	Power Supply
14		V(-)	

Demensions



* Specification is subject to change without notice

Dual-output Thermocouple Converter

WSPF-THW

This compact plug-in converter accepts Thermocouples input conforming to JIS standard and provides optically isolated two DC outputs.
This converter has a linearizer, a cold junction compensation circuit, and a burnout protection circuit as standard equipment which is required to measure temperature.

Features

★ Fine Zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Linearizer, Cold junction compensation circuit, and Burnout protection circuit built-in

Ordering code

WSPF- T H W - □ □□ □ □ - □□

Code	Input Signal
T	T (CC) thermocouple
E	E (CRC) thermocouple
J	J (IC) thermocouple
K	K (CA) thermocouple
N	N thermocouple
R	R (PR13) thermocouple
S	S thermocouple
B	B thermocouple
W	WRe 5-26

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D ＊2	24Vdc ±10% 10.8 to 30Vdc
8	110Vdc ±10%

Code	Test Report
X	None
T	With Test report

Measuring Temperature Range	Code	Manufacturable Range by Thermocouple								
		T	E	J	K	N	R	S	B	W
0 to 100°C	08	○	○	○	○					
0 to 150°C	09	○	○	○	○	○				
0 to 200°C	10	○	○	○	○	○				
0 to 250°C	11	○	○	○	○	○				
0 to 300°C	12	○	○	○	○	○				
0 to 400°C	13		○	○	○	○	○	○		
0 to 500°C	14		○	○	○	○	○	○		
0 to 600°C	15		○	○	○	○	○	○		○
0 to 800°C	16				○	○	○	○	○	○
0 to 1000°C	17				○	○	○	○	○	○
0 to 1200°C	18				○	○	○	○	○	○
0 to 1300°C	19						○	○	○	○
0 to 1400°C	20						○	○	○	○
0 to 1600°C	21						○	○	○	○
0 to 1800°C	22								○	○
0 to 2000°C	23									○
0 to 2300°C	24									○
Other than above	99 ＊1	Contact us								

Code	Output 2	Allowable Load Resistance
A	4 to 20mAdc	550Ω or less
G	0 to 20mAdc	550Ω or less
H	1 to 5Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

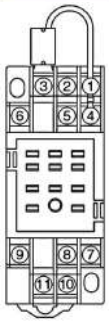
Code	Output 1	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

＊1･･･CE approval do not adapt input range code 99 and output range code S.
＊2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

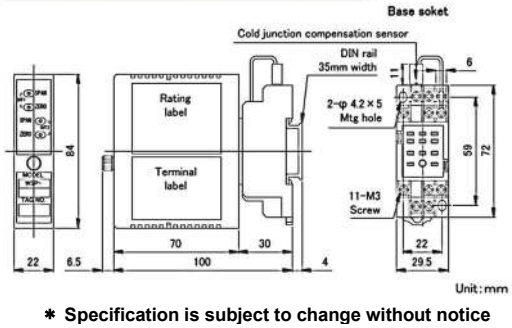
Accuracy	±0.2% FS (at 23±10°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output First output : 15V or less of voltage drop between output Second output : 11V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Cold junction compensation accuracy	±0.5°C or less at 23±10°C (±1°C or less for R, WR and S)
Cold junction compensation temperature	10 to 40°C *R, S, WR thermocouple : ±1°C
Linearization	Available (30% FS or less of R and W is out of range)
Burnout protection	Upscale / downscale *Please specify when you order for downscale
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 min between power supply and input/output terminal, 2000Vac for 1 min between input and output terminal
Power consumption	Approx. 5.6VA (AC), Approx. 90mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	+	Input
2	OUTPUT-2	+	No.2 Output
3	INPUT	-	Input
4	CJC		Cold junction compensation
5	OUTPUT-2	-	No.2 Output
6	NC		No connection
7	OUTPUT-1	+	No.1 Output
8	NC		No connection
9	OUTPUT-1	-	No.1 Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



＊ Specification is subject to change without notice

RTD Converter

WSPF-RTS

This compact plug-in converter accepts a RTD input and provides optically isolated DC voltage or current outputs.
This converter has a linearizer and a burnout protection circuit as standard equipment which is required to measure temperature.

Features

★ Fine Zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Linearizer and Burnout protection circuit built-in
★ High accuracy at 0.1% FS, Response time 25ms

Ordering code

WSPF- R T S - □□□ □ - □□

Code	RTD	Manufacturable Range	
		Temp. Range	Min. Span
F	Pt100Ω	-200 to +850°C	50°C or more
P	JPt100Ω	-200 to +500°C	50°C or more
N	Ni508.4Ω	-50 to +200°C	30°C or more

Code	Measuring Temperature Range
10	0 to 50°C
11	0 to 100°C
12	0 to 150°C
13	0 to 200°C
25	0 to 250°C
30	0 to 300°C
35	0 to 350°C
40	0 to 400°C
50	0 to 500°C
60	0 to 600°C
14	-20 to +80°C
15	-50 to +50°C
16	-50 to +100°C
17	-100 to +100°C
18	-200 to +200°C
99 ＊1	Contact us for other than the above

Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D ＊2	24Vdc ±10% 10.8 to 30Vdc
8	110Vdc ±10%

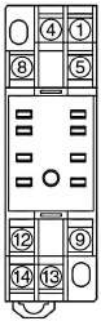
Code	Test Report
X	None
T	With Test report

＊1･･･CE approval do not adapt input range code 99 and output range code S.
＊2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

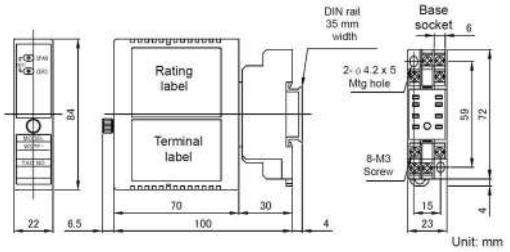
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output 15V or less of voltage drop Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature	-5 to +55°C
Storage temperature range	-10 to +60°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Linearization	Available
Burnout protection	Upscale (less than 1.5sec) *Please contact us for downscale
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 min between power supply and input/output terminal, 2000Vac for 1 min between input and output terminal
Power consumption	Approx. 4.5VA (AC), Approx. 66mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 23(W) X 106.5(D)mm
Weight	Approx. 130g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	A	Input
4		B	
5		B	
8	NC		No connection
9	OUTPUT-1	+	Output
12		-	
13	POWER	U(+)	Power Supply
14		V(-)	

Demensions



＊ Specification is subject to change without notice

Dual-output RTD Converter

WSPF-RTW

This compact plug-in converter accepts a RTD input and provides optically isolated DC voltage or current outputs.
This converter has a linearizer and a burnout protection circuit as standard equipment which is required to measure temperature.

Features

★ Fine Zero & span adjustment by 15 turn trimmer
★ Zero & span adjustment ±10% full scale
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Linearizer and Burnout protection circuit built-in
★ High accuracy at 0.1% FS, Response time 25ms

Ordering code

WSPF- R T W - □□□□□ - □□

Code	RTD	Manufacturable Range	
		Temp. Range	Min. Span
F	Pt100Ω	-200 to +850°C	50°C or more
P	JPt100Ω	-200 to +500°C	50°C or more
N	Ni508.4Ω	-50 to +200°C	30°C or more

Code	Test Report
X	None
T	With Test report

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
＊2	10.8 to 30Vdc
8	110Vdc ±10%

Code	Measuring Temperature Range
10	0 to 50°C
11	0 to 100°C
12	0 to 150°C
13	0 to 200°C
25	0 to 250°C
30	0 to 300°C
35	0 to 350°C
40	0 to 400°C
50	0 to 500°C
60	0 to 600°C
14	-20 to +80°C
15	-50 to +50°C
16	-50 to +100°C
17	-100 to +100°C
18	-200 to +200°C
99 ＊1	Contact us for other than the above

Code	Output 1	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

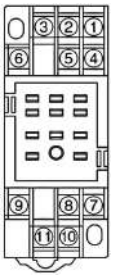
Code	Output 2	Allowable Load Resistance
A	4 to 20mAdc	550Ω or less
G	0 to 20mAdc	550Ω or less
H	1 to 5Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

＊1･･･CE approval do not adapt input range code 99 and output range code S.
＊2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

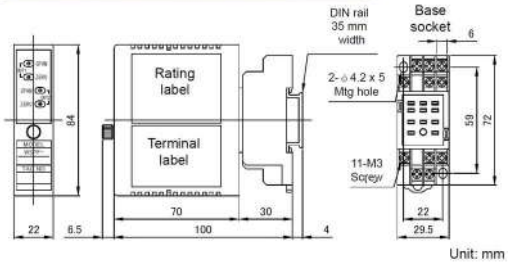
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output First output : 15V or less of voltage drop between output Second output : 7V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Zero & span adjustment	±10% FS (15 turn trimmer)
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Storage temperature range	-10 to +60°C
Temperature coefficient	±0.015% of span per °C
Linearization	Available
Burnout protection	Upscale (less than 1.5sec) *Please contact us for downscale
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 min between power supply and input/output terminal, 2000Vac for 1 min between input and output terminal
Power consumption	Approx. 5.6VA (AC), Approx. 90mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	A	Input
2	OUTPUT-2	+	No.2 Output
3	INPUT	B	Input
4		B	
5	OUTPUT-2	-	No.2 Output
6	NC		No connection
7	OUTPUT-1	+	No.1 Output
8	NC		No connection
9	OUTPUT-1	-	No.1 Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



＊ Specification is subject to change without notice

Potentiometer Converter

WSPF-MS

This compact plug-in signal converter connects with 3-wire type potentiometer, and provides DC voltage or current.
This converter has Isolator built-in, also has burnout protection circuit as standard equipment.

Features

★ Fine Zero & span adjustment by 25 turn trimmer
★ Wide zero & span adjustment
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Burnout protection circuit built-in

Ordering code

WSPF- M S - □□ □ - □□

Code	Rated input (Total Resistance)	Span Ad. Range	Zero Ad. Range
30	50ΩFS to 500ΩFS	50 to 100% FS	0 to 50% FS
31	501ΩFS to 10kΩFS		
19	0 to 343Ω (1kΩFS)	±20% FS (FS = 343Ω)	±20% FS (FS = 343Ω)
99 ＊1	Contact us for other than the above		

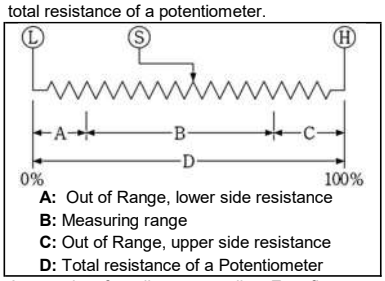
Code	Output	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Test Report
X	None
T	With Test report

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
＊2	10.8 to 30Vdc
8	110Vdc ±10%

★ Note: Zero & Span Adjustment

The measuring range must be 50% or more of total resistance of a potentiometer.



A: Out of Range, lower side resistance
B: Measuring range
C: Out of Range, upper side resistance
D: Total resistance of a Potentiometer

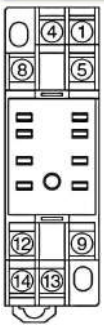
A procedure for adjustment, adjust Zero first, and then adjust the Span.

＊1･･･CE approval do not adapt input range code 99 and output range code S.
＊2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

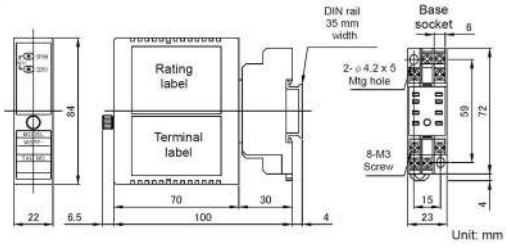
Input signal	3-wire type potensiometer
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output 15V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Span adjustment	50 to 100% of rated input (25 turn trimmer) (±20% for input 19)
Zero adjustment	0 to 50% of span (25 turn trimmer) (±20% for input 19)
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Burnout protection	Upscale / downscale *Please specify when you order for downscale
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 min between power supply and input/output terminal, 2000Vac for 1 min between input and output terminal
Power consumption	Approx. 4.4VA (AC), Approx. 64mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 23(W) X 106.5(D)mm
Weight	Approx. 130g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	HIGH	Input
4		SLIDE	
5		LOW	
8	NC		No connection
9	OUTPUT-1	+	Output
12		-	
13	POWER	U(+)	Power Supply
14		V(-)	

Demensions



＊ Specification is subject to change without notice

Dual-output Potentiometer Converter

WSPF-MSW

This compact plug-in signal converter connects with 3-wire type potentiometer, and provides DC voltage or current.
This converter has Isolator built-in, also has burnout protection circuit as standard equipment.

Features

★ Fine Zero & span adjustment by 25 turn trimmer
★ Wide zero & span adjustment
★ Safe design by dielectric strength of 3000Vac
★ 5 years warranty, long life
★ CE approved
★ Burnout protection circuit built-in

Ordering code

WSPF- M S W - □□ □ □ - □□

Code	Rated input (Total Resistance)	Span Ad. Range	Zero Ad. Range
30	50ΩFS to 500ΩFS	50 to 100% FS	0 to 50% FS
31	501ΩFS to 10kΩFS		
19	0 to 343Ω (1kΩFS)	±20% FS (FS = 343Ω)	±20% FS (FS = 343Ω)
99 ＊1	Contact us for other than the above		

Code	Output 1	Allowable Load Resistance
A	4 to 20mAdc	750Ω or less
B	1 to 5mAdc	3kΩ or less
D	0 to 1mAdc	15kΩ or less
E	0 to 10mAdc	1.5kΩ or less
G	0 to 20mAdc	750Ω or less
H	1 to 5Vdc	1kΩ or more
J	0 to 10mVdc	10kΩ or more
K	0 to 100mVdc	100kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

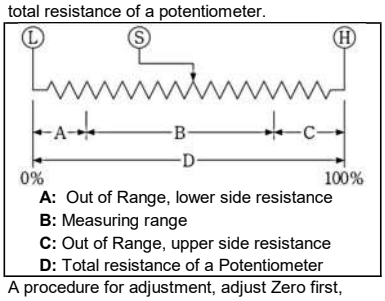
Code	Output 2	Allowable Load Resistance
A	4 to 20mAdc	550Ω or less
D	0 to 1mAdc	11kΩ or less
G	0 to 20mAdc	550Ω or less
H	1 to 5Vdc	1kΩ or more
L	0 to 1Vdc	1kΩ or more
N	0 to 5Vdc	1kΩ or more
P	0 to 10Vdc	2kΩ or more
R	±10Vdc	2kΩ or more
S ＊1	Contact us for other than the above Current output 20mA or less Voltage output 10V or less	

Code	Power Supply
A	100 to 240Vac ±10% 50/60Hz
D	24Vdc ±10%
＊2	10.8 to 30Vdc
8	110Vdc ±10%

Code	Test Report
X	None
T	With Test report

★ Note: Zero & Span Adjustment

The measuring range must be 50% or more of total resistance of a potentiometer.



A: Out of Range, lower side resistance
B: Measuring range
C: Out of Range, upper side resistance
D: Total resistance of a Potentiometer

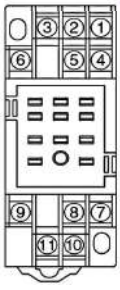
A procedure for adjustment, adjust Zero first, and then adjust the Span.

＊1･･･CE approval do not adapt input range code 99 and output range code S.
＊2･･･CE approval do not adapt when power supply is 10.8Vdc to 30Vdc.

Specifications

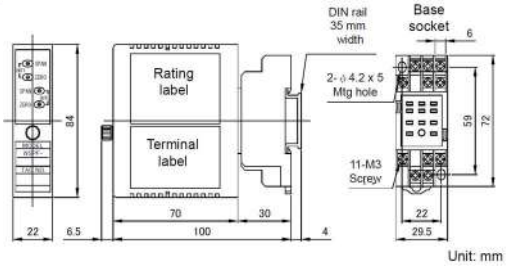
Input signal	3-wire type potensiometer
Accuracy	±0.1% FS (at 23°C)
Response time	Approx. 25ms (0 to 90%)
Allowable load	Current output First output : 15V or less of voltage drop between output Second output : 11V or less of voltage drop between output Voltage output Load current 5mA or less *1μA or less if the output is less than 1V FS
Span adjustment	50 to 100% of rated input (25 turn trimmer) (±20% for input 19)
Zero adjustment	0 to 50% of span (±20% for input 19)
Operating temperature	-5 to +55°C
Operating relative humidity	90% or less (Non-condensing)
Temperature coefficient	±0.015% of span per °C
Burnout protection	Upscale / downscale *Please specify when you order for downscale
Isolation	Between input, output, and power supply
Insulation resistance	100MΩ or more with 500Vdc megger Between input, output, and power supply terminal
Dielectric strength	3000Vac for 1 min between power supply and input/output terminal, 2000Vac for 1 min between input and output terminal
Power consumption	Approx. 5.6VA (AC), Approx. 88mA (DC)
Power supply variation	±0.1% FS (within the range of rated voltage)
Dimensions	84(H) X 29.5(W) X 106.5(D)mm
Weight	Approx. 150g
Structure	Plug-in (Body part and socket part)
Connection	M3 SEMS screw part of the base socket (Tightening torque 0.6N·m)
Mounting	DIN rail or wall surface
Case color and material	Ivory, ABS resin, flame retardant grade UL94V-0
EMC directive	EN61326-1, EN61010-1, EN50581 Installation category : II, Pollution degree : 2
Rated altitude	2000m or less

Terminal connections



No	Symbol		Description
1	INPUT	HIGH	Input
2	OUTPUT-2	+	No.2 Output
3	INPUT	SLIDE	Input
4		LOW	
5	OUTPUT-2	-	No.2 Output
6	NC		No connection
7	OUTPUT-1	+	No.1 Output
8	NC		No connection
9	OUTPUT-1	-	No.1 Output
10	POWER	U(+)	Power Supply
11		V(-)	

Demensions



Unit: mm

＊ Specification is subject to change without notice