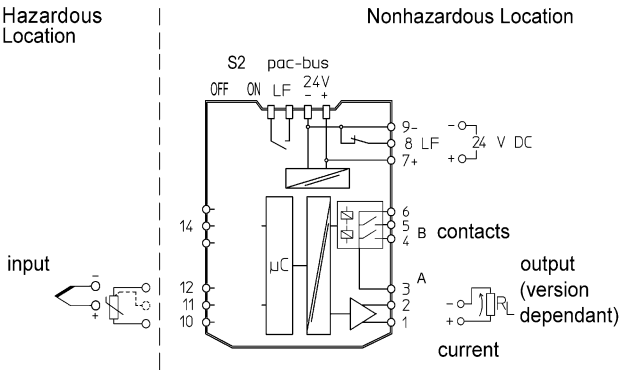




09747E00

Connection Drawing



06658E03

For interfacing to thermocouples RTDs and potentiometers

- One unit for nearly all temperature sensors

● Versions available with limit value relay contacts

● Lockout function to force alarm acknowledgement

● Approved for installation in Division 2 and Zone 2

● Line fault detection

● Simple configuration using a PC or via DIP switches

● Version available with passive output

Technical Tips

When interfacing with a 3-wire potentiometer between 10 kΩ and 100 kΩ, a 10 kΩ shunt resistor is required.

No open circuit detection available in this application. External CJC is required when using T/Cs.

Three terminal versions with integrated Pt100 are available from R. Stahl. See the accessories section for more information. The units with relay contacts for limit values must be configured using the PC software "ISpac Wizard".

Order Code	Current Output	Relay Output
9182/10-50-12s	--	2 NO (DPST)
9182/10-51-11s	active 0/4 mA ... 20 mA	--
9182/10-51-12s	active 0/4 mA ... 20 mA	2 NO (DPST)
9182/10-59-11s	passive 0/4 mA ... 20 mA	--
Note	The order code above is with screw type removable terminals. For alternative types of terminals, please substitute the s as follows: k : for spring clamp terminals; q : for insulation displacement terminals	

Technical Specifications	
Hazardous Location	
Entity Parameters	
FM / UL / CSA / ATEX	V _{OC} = 6.5 V, I _{SC} = 19.7 mA, P _O = 32 mW
Isolation voltage	V _m = 250 V AC
Intrinsically Safe Input	
Configuration	via PC software: all units, via DIP switches: 9182/10-51-11 and 9182/10-59-11
RTD Input	
Input	2-, 3- or 4-wire sensors
Types	Pt 100, Pt 500, Pt 1000 (IEC 60751) - 328 °F ... 1562 °F (- 200 °C ... + 850 °C) Ni 100, Ni 500, Ni 1000 (DIN 43760) - 76 °F ... + 356 °F (- 60 °C ... + 180 °C)
Linearity	temperature / resistance
Max. line resistance each core	< 50 Ω (2-wire sensor) < 100 Ω (3- or 4-wire sensor)

Technical Specifications	
Nonhazardous Location	
Output	
Active output	0/4 mA ... 20 mA
Load resistance R _L	0 Ω ... 750 Ω
Delay from input to output	≤ 500 ms
Passive output	0/4 mA ... 20 mA
Supply voltage	≤ 31.2 V DC
Minimum load resistance R _L	0 Ω at 3 V ... 20 V, 200 Ω at 24 V, 500 Ω at 30 V
Trip Point Contacts A and B	
Contacts	2 NO (DPST)
Switching voltage	≤ ± 30 V
Switching current (resistive load)	≤100 mA
On resistance	≤ 2.5 Ω
Lockout function	output contact remains in alarm position, reset through DIP switches or "power off" in configuration

Technical Specifications

Hazardous Location

Thermocouple Input

Types	Not all the ranges can be set with the DIP switches B (IEC 60751) + 482 °F ... + 3272 °F (+ 250 °C ... + 1800 °C) E (IEC 60751) - 328 °F ... + 1832 °F (- 200 °C ... + 1000 °C) J (IEC 60751) - 328 °F ... + 2192 °F (- 200 °C ... + 1200 °C) K (IEC 60751) - 328 °F ... + 2498 °F (- 200 °C ... + 1370 °C) N (IEC 60751) - 328 °F ... + 2372 °F (- 200 °C ... + 1300 °C) R (IEC 60751) - 58 °F ... + 3213 °F (- 50 °C ... + 1767 °C) S (IEC 60751), PC configurable only - 58 °F ... + 3213 °F (- 50 °C ... + 1767 °C) T (IEC 60751) - 328 °F ... 752 °F (- 200 °C ... + 400 °C) L (DIN 43710), PC configurable only - 328 °F ... 1652 °F (- 200 °C ... + 900 °C) U (DIN 43710), PC configurable only - 328 °F ... 1112 °F (- 200 °C ... + 600 °C) XK (GOST), PC configurable only - 328 °F ... 1472 °F (- 200 °C ... + 800 °C)
-------	--

Linearity temperature / voltage

Max. line resistance (sum) ≤ 1000 Ω

Compensation external CJC must be used, set in PC or via DIP switches "ADJ" on top of unit,

Potentiometer Input

Input 3-wire sensor
50 Ω ... 100 KΩ

Error Detection (LFD)

Error detection user selectable via DIP switches on top of unit, red LED indication "LF"

Open circuit for thermocouples and RTDs > 1 kΩ

Short circuit for potentiometers and RTDs with temperature linearization

When line fault detected default: output = 2.4 mA, configurable: 0 mA ... 23 mA or hold last value

Galvanic Isolation

Test voltage under regulations EN 50020

I.S. input to output 1.5 kV AC

I.S. input to power supply 1.5 kV AC

I.S. input to configuration interface 1.5 kV AC

I.S. input to error contact 1.5 kV AC

Technical Specifications

Nonhazardous Location

Configuration

PC Configuration via "ISpac Wizard" software, RS 232C via special R. STAHL cable which connects to top of unit, all functions and diagnostics available

DIP Switches 12 switches on the side of the unit, 4 switches on the top of the unit, limited functions and diagnostics available

Power Supply

Indication green LED "PWR"

Nominal voltage V_{nom} 24 V DC

Voltage range 18 V ... 31.2 V

Nominal current (at V_{nom}) 70 mA

Power consumption (at V_{nom}) ≤ 1.9 W

Polarity reversal protection yes

Error Messaging

Power supply contact (30 V, 100 mA), closed to ground in case of error

pac-Bus floating contact (30 V, 100 mA)

Galvanic Isolation

Test voltage under regulations EN 50178

Output to power supply 350 V AC

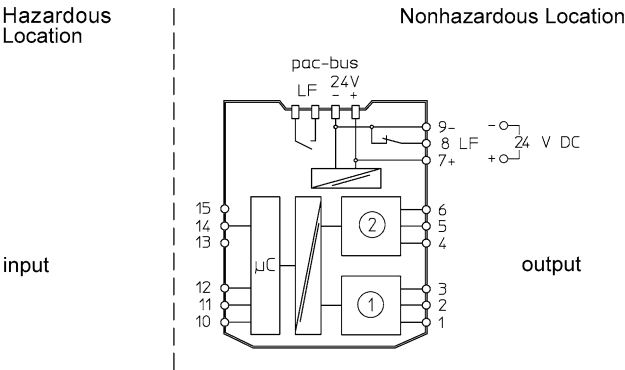
Output to configuration interface 350 V AC

Error contact to power supply and output 350 V AC



09747E00

Connection Drawing



09748E03

For interfacing to thermocouples, RTDs and potentiometers

- One unit for nearly all temperature sensors
 - Version available with limit value relay contacts
 - Lockout function to force alarm acknowledgement

- Line fault detection
 - Simple configuration using a PC or via DIP switches
 - Approved for installation in Division 2 and Zone 2

Technical Tips

When interfacing with a 3-wire potentiometer between 10 kΩ and 100 kΩ, a 10 kΩ shunt resistor is required.

No open circuit detection available in this application. External CJC is required when using T/Cs.

Three terminal versions with integrated Pt100 are available from R. Stahl. See the accessories section for more information. The unit with relay contacts for limit values must be configured using the PC software "ISpac Wizard".

Order Code	Output	Output Configuration	
		Channel 1	Channel 2
9182/20-50-12s	2 NO (DPST)		
9182/20-51-11s	active 0/4 mA ... 20 mA		
Note	The order code above is with screw type removable terminals. For alternative types of terminals, please substitute the s as follows: k : for spring clamp terminals; q : for insulation displacement terminals		

Technical Specifications	
Hazardous Location	
Entity Parameters	
FM / UL / CSA / ATEX	V _{OC} = 6.5 V, I _{SC} = 19.7 mA, P _O = 32 mW
Isolation voltage	V _m = 250 V AC
Intrinsically Safe Input	
Configuration	via PC software: all units, via DIP switches: 9182/20-51-11
RTD Input	
Input	2-, 3- or 4-wire sensors
Types	Pt 100, Pt 500, Pt 1000 (IEC 60751) - 328 °F ... 1562 °F (- 200 °C ... + 850 °C) Ni 100, Ni 500, Ni 1000 (DIN 43760) - 76 °F ... + 356 °F (- 60 °C ... + 180 °C)
Linearity	temperature / resistance
Max. line resistance each core	< 50 Ω (2-wire sensor) < 100 Ω (3- or 4-wire sensor)

Technical Specifications	
Nonhazardous Location	
Output	
Active output	0/4 mA ... 20 mA
Load resistance R _L	0 Ω ... 600 Ω
Delay from input to output	≤ 500 ms
Trip Point Contacts A and B	
Contacts	2 NO (DPST)
Switching voltage	≤ ± 30 V
Switching current (resistive load)	≤ 100 mA
On resistance	≤ 2.5 Ω
Lockout function	output contact remains in alarm position, reset through DIP switches or "power off" in configuration

Technical Specifications	
Hazardous Location	
Thermocouple Input	
Types	Not all the ranges can be set with the DIP switches B (IEC 60751) + 482 °F ... + 3272 °F (+ 250 °C ... + 1800 °C) E (IEC 60751) - 328 °F ... + 1832 °F (- 200 °C ... + 1000 °C) J (IEC 60751) - 328 °F ... + 2192 °F (- 200 °C ... + 1200 °C) K (IEC 60751) - 328 °F ... + 2498 °F (- 200 °C ... + 1370 °C) N (IEC 60751) - 328 °F ... + 2372 °F (- 200 °C ... + 1300 °C) R (IEC 60751) - 58 °F ... + 3213 °F (- 50 °C ... + 1767 °C) S (IEC 60751), PC configurable only - 58 °F ... + 3213 °F (- 50 °C ... + 1767 °C) T (IEC 60751) - 328 °F ... + 752 °F (- 200 °C ... + 400 °C) L (DIN 43710), PC configurable only - 328 °F ... + 1652 °F (- 200 °C ... + 900 °C) U (DIN 43710), PC configurable only - 328 °F ... + 1112 °F (- 200 °C ... + 600 °C) XK (GOST), PC configurable only - 328 °F ... + 1472 °F (- 200 °C ... + 800 °C)
Linearity	temperature / voltage
Max. line resistance (sum)	≤ 1000 Ω
Compensation	external CJC must be used, set in PC or via DIP switches "ADJ" on top of unit,
Potentiometer Input	
Input	3-wire sensor 50 Ω ... 100 KΩ
Error Detection (LFD)	
Error detection	user selectable via DIP switches on top of unit, red LED indication "LF"
Open circuit	for thermocouples and RTDs > 1 kΩ
Short circuit	for potentiometers and RTDs with temperature linearization
When line fault detected	default: output = 2.4 mA, configurable: 0 mA ... 23 mA or hold last value
Galvanic Isolation	
Test voltage under regulations EN 50020	
I.S. input to output	1.5 kV AC
I.S. input to power supply	1.5 kV AC
I.S. input to configuration interface	1.5 kV AC
I.S. input to error contact	1.5 kV AC
Galvanic isolation of I.S. inputs	
with thermocouples	20 V
with resistance sensors	--

Technical Specifications	
Nonhazardous Location	
Configuration	
PC Configuration	via "ISpac Wizard" software, RS 232C via special R. STAHL cable which connects to top of unit, all functions and diagnostics available
DIP Switches	12 switches on the side of the unit, 4 switches on the top of the unit, limited functions and diagnostics available
Power Supply	
Indication	green LED "PWR"
Nominal voltage V_{nom}	24 V DC
Voltage range	18 V ... 31.2 V
Nominal current (at V_{nom})	80 mA
Power consumption (at V_{nom})	≤ 1.9 W
Polarity reversal protection	yes
Error Messaging	
Power supply	contact (30 V, 100 mA), closed to ground in case of error
pac-Bus	floating contact (30 V, 100 mA)
Galvanic Isolation	
Test voltage under regulations EN 50178	
Output to power supply	350 V AC
Output to configuration interface	350 V AC
Outputs to each other	350 V AC
Error contact to power supply and output	350 V AC

9182 Series, Temperature Converter - Dual Channel

Customer Specific Set-up Sheet

Order-No.: _____ - Pos.: _____ Pieces: _____

Type	Channels	Output	Trip point contact
☐ 9182 / 10 - 51 - 11.	1	0/4...20 mA	none
☐ 9182 / 10 - 59 - 11.	1	passive	none
☐ 9182 / 20 - 51 - 11.	2	0/4...20 mA	none
☐ 9182 / 10 - 51 - 12.	1	0/4...20 mA	2 NO
☐ 9182 / 10 - 50 - 12.	1	None	2 NO
☐ 9182 / 20 - 50 - 12.	2	None	2 NO per channel

with:

☐ Screw terminal s (standard)
 ☐ Spring clamp terminal k
 ☐ Insulation displacement terminal q

	Standard	Channel 1	Channel 2
Signal Tag	Signal 1/2		
I.S. input			
RTD	☐	☐	☐
Sensor type	Pt 100	☐ Pt 100 ☐ Pt 500 ☐ Pt 1000 ☐ Ni 100 ☐ Ni 500 ☐ Ni 1000	☐ Pt 100 ☐ Pt 500 ☐ Pt 1000 ☐ Ni 100 ☐ Ni 500 ☐ Ni 1000
Circuit type	3-wire	☐ 2-wire ☐ 3-wire ☐ 4-wire	☐ 2-wire ☐ 3-wire ☐ 4-wire
Measurement range	0...400 °C	from _____ to _____ ☐ °C ☐ °F ☐ K ☐ Ω	from _____ to _____ ☐ °C ☐ °F ☐ K ☐ Ω
Thermocouple		☐	☐
Type		☐ B ☐ E ☐ J ☐ K ☐ N ☐ R ☐ S ☐ T ☐ L ☐ U ☐ XK	☐ B ☐ E ☐ J ☐ K ☐ N ☐ R ☐ S ☐ T ☐ L ☐ U ☐ XK
CJC type		☐ ext. Pt 100 ☐ const. temp. _____	☐ ext. Pt 100 ☐ const. temp. _____
Measurement range		from _____ to _____ ☐ °C ☐ °F ☐ K ☐ mV	from _____ to _____ ☐ °C ☐ °F ☐ K ☐ mV
Potentiometer		☐	☐
Range		☐ up to 500 Ω ☐ up to 2.5 kΩ ☐ up to 10 kΩ ☐ up to 100 kΩ (+Shunt)	☐ up to 500 Ω ☐ up to 2.5 kΩ ☐ up to 10 kΩ ☐ up to 100 kΩ (+Shunt)
Measurement range		from _____ % to _____ %	from _____ % to _____ %
Output (only 9182/*0-51-1*)			
Signal	4...20 mA	☐ 0...20 mA ☐ 4...20 mA	☐ 0...20 mA ☐ 4...20 mA
Fault behavior	off	☐ hold last value ☐ off ☐ fixed value: _____ (standard 2.4 mA)	☐ hold last value ☐ off ☐ fixed value: _____ (standard 2.4 mA)
Trip point settings for contact A (only 9182/*0-51-12)			
Signaling	deactivated	☐ activated ☐ deactivated	☐ activated ☐ deactivated
Value	25 %	_____ % or absolute: _____	_____ % or absolute: _____
Contact behavior	☐	☐ closes if signal > value ☐ closes if signal < value ☐ opens if signal > value ☐ opens if signal < value	☐ closes if signal > value ☐ closes if signal < value ☐ opens if signal > value ☐ opens if signal < value
Hysteresis	1 %	_____ % (0.1...10 %)	_____ % (0.1...10 %)
Lockout function	deactivated	☐ activated ☐ deactivated	☐ activated ☐ deactivated
Trip point settings for contact B (only 9182/*0-51-12)			
Signaling	deactivated	☐ activated ☐ deactivated	☐ activated ☐ deactivated
Value	75 %	_____ % or absolute: _____	_____ % or absolute: _____
Contact behavior	☐	☐ closes if signal > value ☐ closes if signal < value ☐ opens if signal > value ☐ opens if signal < value	☐ closes if signal > value ☐ closes if signal < value ☐ opens if signal > value ☐ opens if signal < value
Hysteresis	1 %	_____ % (0.1...10 %)	_____ % (0.1...10 %)
Lockout Function	deactivated	☐ activated ☐ deactivated	☐ activated ☐ deactivated

09847E03