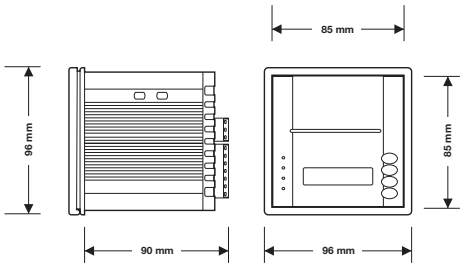
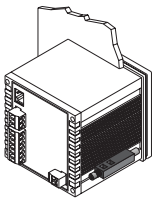
PRINTWELL 1200

2 (up to 6) channel data recorder

INSTALLATION

Panel mounting, panel cut out 92x92 mm (3.62x3.62"), with screw brackets (they are supplied by the builder).
Attention: installation with screw brackets; you have to moderate the clamping torque, in order not to damage the box and screw brackets (see figure below).





OPERATION

How to enable printing

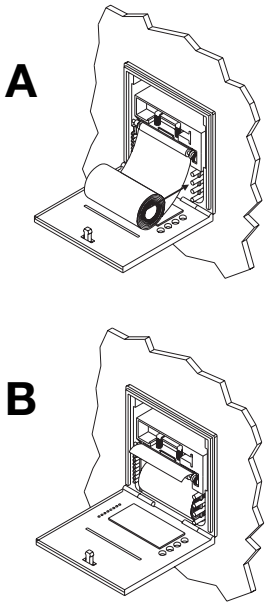
If you have to enable printing press the "print enable key".
During the normal operation the instrument prints and/or stores the values the probes are reading.
During the OFF mode the instrument stores the values the probes are reading.

How to feed the paper by hand

If you have to feed the paper by hand press the "feed key".

How to change the roll of paper

If you have to change the roll of paper:
•turn the instrument OFF;
•press the "push to open key" for opening the panel at the front of the instrument;
•slip the roll of paper into the lower side of the roller;
•press the "feed key" as long as the roller drags the roll of paper;
•put the roll of paper into its box (A);
•close the panel at the front of the instrument (B).



PRINTING MODES

On Line Report

Once the acquisition time you have set with the parameter "Acq. Time" has passed, the instrument will print and store the values the probes will be reading.
The parameter "Off Line" must have value "No".

Probe's values are shown in the sequence AN1, AN2,...; AN1,... depending on the nr. of inputs configured.

Daily Report

Once the acquisition time you have set with the parameter "Acq. Time" has passed, the instrument will store the values the probes will be reading and it will print them at the time you have set with the parameter "Print Hour". The parameter "Off Line" must have value "Yes" and the parameter "Print Hour" must have values different from "Off" (1).

Historical Report

By pressing in sequence UP and DOWN keys the printer will print out all the historical data (i.e. all the data stored in the instrument at that time).
Allarms and error conditions are highlited in bold type.
Once the acquisition time you have set with the parameter "Acq. Time" has passed, the instrument will store the values the probes will be reading and it will print them by activating the input for remote print.
The parameters "Off Line" and "Remote Print" must have value "Yes" (1).
NOTE:(1) You can use the Daily Report and Historical Report printing modes at the same time.

CONFIGURATION PARAMETERS

See table of Parameters for whole list.

How to set the configuration parameters

Configuration parameters are arranged on two levels (you can select them according to the password you use).
1)If you have to gain access the procedure:
•press the UP/prg key: the instrument will show password
•press the UP/prg and the DOWN key: the instrument will show <>
2) If you have to gain access the "User" level:
•press the UP/prg key or the DOWN key for setting "-19"
•press the UP/prg key and the DOWN key: the instrument will show "Print Setup?"
3)If you have to gain access the "Installer" level:
•press the UP/prg key or the DOWN key for setting "19"
•press the UP/prg key and the DOWN key: the instrument will show "Print Setup?"
4) If you have to select a parameter:
•press the UP/prg key or the DOWN key

KEYS

UP/prg Key	DOWN Key	print enable Key	Feed Key	push to open Key
prg		▶/II	feed	PUSH TO OPEN

LED	MEANING
print	print enable LED: if it is lighted, the instrument is enabled to print
alarm	alarm LED: if it flashes, an alarm will be running
prg	set/prg LED: if it is lighted, the configuration parameters setting procedure will be running if it flashes, the modification of the value of configuration parameters will be running
timer	timer LED: if it is lighted, the Daily Report printing mode will be running

INDICATION	MEANING
Printing...	if it scrolls on the LCD, the On Line Report printing mode will be running
Recording...	if it scrolls on the LCD, the Daily Report and/or Historically Report printing modes will be running
Memory 90...99%	if it is showed by the LCD, the memory will be running out

ALARMS

CODE	REASONS	REMEDIES
AN1...6 ERR probe 1 alarm	• the kind of probe 1...6 you have connected is not right • the probe 1...6 plays up • the connection instrument-probe 1...6 is wrong • the value the probe 1...6 is reading is outside the limits allowed by the working range of the instrument • the value for the probe 1...6 is not stable (NOTE: for instability we mean that the value read changes every 2 seconds for 8 times for almost 1°C/pt)	• look at the parameter AN 1...6 Type • test the integrity of the probe • test the instrument-probe connection • test the value close to the probe (it has to be between the limits allowed by the working range) • test that close to the probe there are no disturbs (read by the probe) that could interfer a correct reading of the temperature value)
AN1...6 AH upper alarm probe 1...6	• the value the probe 1 is reading is outside the limit you have set with the parameter AN 1...6 Max Alarm	• test the value close to the probe (look at the parameters AN 1...6 Alarm Hyst and AN 1...6 Max Alarm)
AN1...6 AL lower alarm probe 1...6	• the value the probe 1 is reading is outside the limit you have set with the parameter AN 1...6 Min Alarm	• test the value close to the probe (look at the parameters AN 1...6 Alarm Hyst and AN 1...6 Min Alarm)
Memory Full memory run out alarm	• the memory has run out **NOTE: the instrument is already overwriting the old stored values**	• erase the data the instrument has stored (look at the parameter Delete Memory?)

EFFECTS

(1) if the On Line Report printing mode is running, the instrument will print and store the event; if the Daily Report and/or Historical Report printing modes are running, the instrument will store the event.
(2) the instrument will not print and store any data.

5)If you have to modify the value of the parameter:
• press the UP/prg key and the DOWN key: the instrument will show <> and ...
•press the UP/prg key or the DOWN key then...
•press the UP/prg key and the DOWN key
6)
If you have to quit the procedure:
•do not operate for the time you have set with the parameter “Timeout Setup”.
If you modify the value of the parameter, the modification will have effect as soon as you will quit the setting procedure.

ALARMS
See table ALARMS.

TECHNICAL DATA
Box: self-extinguishing grey.
Size: 96x96x90 mm (3.77x3.77x3.54").
Installation: panel mounting, panel cut out 92x92 mm (3.62x3.62"), with screw brackets (they are supplied by the builder).
Frontal protection: IP30.
Connections: extractable terminal blocks with pitch 5 mm (0.19") for cables up to 2.5 mm^2 ($0.38"^2$) (inputs and recorder) and with pitch 7.5 mm (0.29") for cables up to 2.5 mm^2 ($0.38"^2$) (power supply).
Ambient temperature: from 0 to 55 °C (32 to 131 °F,
Ambient relative humidity (non condensing): 10...90%.
Power supply: 110-240 V~, 50/60 Hz (standard model) or 12-36 V~/⎓,
50/60 Hz (by request); the maximum power consumption is 12 W.
Clock data maintenance, without power supply: typically more than 3 years
Memory capacity: 2000 printing lines, independently from the number of inputs (e.g. if the acquisition time interval is 15min, the capacity will be 500h, about 21 days).
Measure inputs: 2 (up to 6, using the optional expansion module to order separatly) for PTC or NTC probes, “J” or “K” thermocouples, 2 wires Pt 100 probes, 4-20 mA current transducers.
At terminal 4 there are 12 V⎓ you can use in order to supply the transducers.
Digital inputs: 1 for remote print (N.O.; contact) without voltage (it works with 5 mA).
Working range: from -45 to 150 °C (-49 to 302 °F) for PTC probe, from -20 to 110 °C (-4 to 230 °F) for NTC probe, from -100 to 700 °C (-148 to 1.292 °F) for “J” thermocouple, from -100 to 1300 °C (-148 to 2.372 °F) for “K” thermocouple, from -100 to 600 °C (-148 to 1112 °F) for 2 wires Pt 100 probe.
Resolution: 1 °F with unit of measure in Fahrenheit, 1 °C with unit of measure in Celsius, 1% of relative humidity, 1 bar.
Display: one green LCD (2 lines per 16 characters) 11.5 mm (0.45") high, instrument mode indicators.
Maximum size of the roll of paper: 58 x Ø 30 mm (2.28 x Ø 1.18").
Print width: 48 mm (1.88").
Dot number (for every line): 384.
Print density: 8 dot per mm.

ELECTRICAL CONNECTIONS
See figure.
Attention: For thermocouples and current inputs provide an electrically separated supply for each instrument; moreover for thermocouples it is suggested to use an insulated junction.

CONDITIONS OF USE
For safety reasons the printing device must be installed and used according to the instruction provided.
The device must be adequately protected from water and dust as per the application. The device is ideally suited for use on household appliances and/or similar.
It is classified as follows:
•according to its manufacture: as an automatic electronic device to be incorporated by independent mounting;
•as a Class A device in relation to the category and structure of the software.
Any other use other than that permitted is de facto prohibited.

ANALOGUE INPUT TABLE

Probe Type	Rif.	Printer Working Range	Riesolution*	Precision*
PTC	PHILIPS KTY 81-121®	-45...150	1°C / 1°F / 1% / 1bar	±1°
NTC	SEMITEC 103 AT-2®	-20...110	1°C / 1°F / 1% / 1bar	±1°
TcJ	/	-100...700	1°C / 1°F / 1% / 1bar	±1°
TcK	/	-100...1300	1°C / 1°F / 1% / 1bar	±1°
Pt100	/	-100...600	1°C / 1°F / 1% / 1bar	±1°
4...20mA	/	see parameters ANx 4-20mA Type	see parameters ANx 4-20mA Type	see parameters ANx 4-20mA Type

*depending on the U.M. (Unit of Measurement)
x=1...6

PARAMETERS

"User" Parameters (Password = -19)

Parameter	Description	RANGE	U.M.	DEFAULT
	PASSWORD			
Password	Password	-99...99	num	0
	PRINT OF THE INSTRUMENT SET UP			
Print Setup?	print of the instrument set up (2)	yes/no	flag	no
	PRINTING MODE			
Off Line	printing mode Yes = Daily Report and Historical Report, No = On Line Report (3)	yes/no	flag	no
Remote Print	enabling of the Historical Report printing mode (if Off Line = Yes)	yes/no	flag	no
Print Hour	printing time by using the Daily Report printing mode (if Off Line = Yes; Off = the instrument will never print the data)	of...23	h	8

"Installer" Parameters (Password = -19)

Parameter	Description	RANGE	U.M.	DEFAULT
	PASSWORD			
Password	password	-99...99	num	0
	PRINT OF THE INSTRUMENT SET UP			
Print Setup?	print of the instrument set up (2)	yes/no	flag	no
	GENERIC SETTINGS			
Celsisius/Fahr.	temperature unit of measure (if AN1...6 Type 4-20mA)	°C/°F	°C/°F	°C
Acq.Time	acquisition time	1...360	min	2
Day Setup 1	real day	1...31	day	1
Month Setup	real month	1...12	mounth	1
Year Setup	real year	1990...2050	year	2001
Hour Setup	real hour	0...23	h	0
Min Setup	real minute	0...59	min	0
Timeout Setup	time without you operate with the keys in order that the instrument can quit the configuration parameters setting procedure	5...100	sec	10
	PRINTING MODE			
Off Line	printing mode (Yes = Daily Report and Historical Report, No = On Line Report) (3)	yes/no	flag	no
Remote Print	enabling of the Historical Report printing mode (if Off Line = Yes)	yes/no	flag	no
Print Hour	printing time by using the Daily Report printing mode (if Off Line = Yes; the instrument will never print the data)	0ff...23	h	8
	ERASING OF THE DATA THE INSTRUMENT HAS STORED			
Delete Memory?	erasing of the data the instrument has stored	yes/no	flag	no
Memory Type	data management when memory spece is full 0= the instrument doesn't print and store any new data 0= the instrument erase old data to store the new ones (5)	0/1	flag	0
	MEASURE INPUTS NUMBER			
N. Probe	measure inputs number	1...6	num	1
	MEASURE INPUT 1			
AN1 Type	kind of probe 1 (PTC, TC J, TC K, NTC, 4-20 mA, Pt100)	---	flag	NTC
AN1 Alarm Setup	kind of alarm (No = it will never be activated, AH = upper alarm, AL = lower alarm, AH & AL = both the upper alarm and the lower one)	---	flag	No
AN1 Max Alarm	upper alarm threshold (if AN1 Alarm Setup = AH or AH & AL)	-99...999	(6)	70
AN1 Min Alarm	lower alarm threshold (if AN1 Alarm Setup = AL or AH & AL)	-99...999	(6)	10
AN1 Alarm Hyst	hysteresis (differential, it is relative to AN1 Max Alarm and AN1 Min Alarm, it is important if AN1 Alarm Setup No)	0...20	(6)	0
AN1 Offset	probe 1 calibration	-20...20	(6)	0
AN1 4-20mA Type	unit of measure (if AN1 Type = 4-20 mA; %RH = percentage of relative humidity, bar = bar, °C = ° Celsius; °F = °Fahrenheit; Hz = Herz; mA = milliAmpere; N = Newton)	---	flag	%RH
AN1 4-20mA Min	minimum value of the range of the transducer 1 (if AN1 Type = 4-20 mA)	-99...999	pts	0
AN1 4-20mA Max	maximum value of the range of the transducer 1 (if AN1 Type = 4-20 mA)	-99...999	pts	100
AN1 dec. point	decimal point position (if AN1 Type = 4-20 mA) 0= no decimal values, 1 = 1 decimal value, 2 = 2 decimal values)	0/1/2	num	0
	MEASURE INPUT 2			
AN2 Type	kind of probe 2 (PTC, TC J, TC K, NTC, 4-20 mA, Pt100) (7)	---	flag	NTC
AN2 Alarm Setup	kind of alarm (No = it will never be activated, AH = upper alarm, AL = lower alarm, AH & AL = both the upper alarm and the lower one) (7)	---	flag	No
AN2 Max Alarm	upper alarm threshold (if AN2 Alarm Setup = AH or AH & AL) (7)	-99...999	(8)	70
AN2 Min Alarm	lower alarm threshold (if AN2 Alarm Setup = AL or AH & AL) (7)	-99...999	(8)	10
AN2 Alarm Hyst	hysteresis (differential, it is relative to AN2 Max Alarm and AN2 Min Alarm, it is important if AN2 Alarm Setup _ No) (7)	0...20	(8)	0
AN2 Offset	probe 2 calibration (7)	-20...20	(8)	0
AN2 4-20mA Type	unit of measure (if AN2 Type = 4-20 mA; %RH = percentage of relative humidity, bar = bar, °C = ° Celsius; °F = °Fahrenheit; Hz = Herz; mA = milliAmpere; N = Newton) (7)	---	flag	%RH
AN2 4-20mA Min	minimum value of the range of the transducer 2 (if AN2 Type = 4-20 mA) (7)	-99...999	pts	0
AN2 4-20mA Max	maximum value of the range of the transducer 2 (if AN2 Type = 4-20 mA) (7)	-99...999	pts	100
AN2 dec. point	decimal point position (if AN2 Type = 4-20 mA) 0= no decimal values, 1 = 1 decimal value, 2 = 2 decimal values) (7)	0/1/2	num	0
	MEASURE INPUT 3			
AN3 Type	kind of probe 3 (PTC, TC J, TC K, NTC, 4-20 mA, Pt100) (9)			
AN3 Alarm Setup	kind of alarm (No = it will never be activated, AH = upper alarm, AL = lower alarm, AH & AL = both the upper alarm and the lower one) (9)	---	flag	NTC
AN3 Max Alarm	upper alarm threshold (if AN3 Alarm Setup = AH or AH & AL) (9)	---	flag	No
AN3 Min Alarm	lower alarm threshold (if AN3 Alarm Setup = AL or AH & AL) (9)	-99...999	(10)	70
AN3 Alarm Hyst	hysteresis (differential, it is relative to AN3 Max Alarm and AN3 Min Alarm, it is important if AN3 Alarm Setup _ No) (9)	-99...999	(10)	10

Parameter	Description	RANGE	U.M.	DEFAULT
AN3 Offset	probe 3 calibration (9)	0...20	(10)	0
AN3 4-20mA Type	unit of measure (if AN3 Type = 4-20 mA; %RH = percentage of relative humidity, bar = bar, °C = ° Celsius; °F = °Fahrenheit; Hz = Herz; mA = milliAmpere; N = Newton) (9)	-20...20 ---	(10) flag	0 %RH
AN3 4-20mA Min	minimum value of the range of the transducer 3 (if AN3 Type = 4-20 mA) (9)	-99...999	pts	0
AN3 4-20mA Max	maximum value of the range of the transducer 3 (if AN3 Type = 4-20 mA) (9)	-99...999	pts	100
AN3 dec. point	decimal point position (if AN3 Type = 4-20 mA) 0= no decimal values, 1 = 1 decimal value, 2 = 2 decimal value) (9)	0/1/2	num	0
	MEASURE INPUT 4			
AN4 Type	kind of probe 4 (PTC, TC J, TC K, NTC, 4-20 mA, Pt100) (11)	---	flag	NTC
AN4 Alarm Setup	kind of alarm (No = it will never be activated, AH = upper alarm, AL = lower alarm, AH & AL = both the upper alarm and the lower one) (11)	---	flag	No
AN4 Max Alarm	upper alarm threshold (if AN4 Alarm Setup = AH or AH & AL) (11)	-99...999	(12)	70
AN4 Min Alarm	lower alarm threshold (if AN4 Alarm Setup = AL or AH & AL) (11)	-99...999	(12)	10
AN4 Alarm Hyst	hysteresis (differential, it is relative to AN4 Max Alarm and AN4 Min Alarm, it is important if AN4 Alarm Setup _ No) (11)	0...20	(12)	0
AN4 Offset	probe 4 calibration (11)	-20...20	(12)	0
AN4 4-20mA Type	unit of measure (if AN4 Type = 4-20 mA; %RH = percentage of relative humidity, bar = bar, °C = ° Celsius; °F = °Fahrenheit; Hz = Herz; mA = milliAmpere; N = Newton) (11)	---	flag	%RH
AN4 4-20mA Min	minimum value of the range of the transducer 4 (if AN4 Type = 4-20 mA) (11)	-99...999	pts	0
AN4 4-20mA Max	maximum value of the range of the transducer 4 (if AN4 Type = 4-20 mA) (11)	-99...999	pts	100
AN4 dec. point	decimal point position (if AN4 Type = 4-20 mA) 0= no decimal values, 1 = 1 decimal value, 2 = 2 decimal values) (11)	0/1/2	num	0
	MEASURE INPUT 5			
AN5 Type	kind of probe 5 (PTC, TC J, TC K, NTC, 4-20 mA, Pt100) (13)	---	flag	NTC
AN5 Alarm Setup	kind of alarm (No = it will never be activated, AH = upper alarm, AL = lower alarm, AH & AL = both the upper alarm and the lower one) (13)	---	flag	No
AN5 Max Alarm	upper alarm threshold (if AN5 Alarm Setup = AH or AH & AL) (13)	-99...999	(14)	70
AN5 Min Alarm	lower alarm threshold (if AN5 Alarm Setup = AL or AH & AL) (13)	-99...999	(14)	10
AN5 Alarm Hyst	hysteresis (differential, it is relative to AN5 Max Alarm and AN5 Min Alarm, it is important if AN5 Alarm Setup _ No) (13)	0...20	(14)	0
AN5 Offset	probe 5 calibration (13)	-20...20	(14)	0
AN5 4-20mA Type	unit of measure (if AN5 Type = 4-20 mA; %RH = percentage of relative humidity, bar = bar, °C = ° Celsius; °F = °Fahrenheit; Hz = Herz; mA = milliAmpere; N = Newton) (13)	---	flag	%RH
AN5 4-20mA Min	minimum value of the range of the transducer 5 (if AN5 Type = 4-20 mA) (13)	-99...999	pts	0
AN5 4-20mA Max	maximum value of the range of the transducer 5 (if AN5 Type = 4-20 mA)(13)	-99...999	pts	100
AN5 dec. point	decimal point position (if AN5 Type = 4-20 mA) 0= no decimal values, 1 = 1 decimal value, 2 = 2 decimal values) (13)	0/1/2	num	0
	MEASURE INPUT 6			
AN6 Type	kind of probe 6 (PTC, TC J, TC K, NTC, 4-20 mA, Pt100) (15)	---	flag	NTC
AN6 Alarm Setup	kind of alarm (No = it will never be activated, AH = upper alarm, AL = lower alarm, AH & AL = both the upper alarm and the lower one) (15)	---	flag	No
AN6 Max Alarm	upper alarm threshold (if AN5 Alarm Setup = AH or AH & AL) (15)	-99...999	(16)	70
AN6 Min Alarm	lower alarm threshold (if AN5 Alarm Setup = AL or AH & AL) (15)	-99...999	(16)	10
AN6 Alarm Hyst	hysteresis (differential, it is relative to AN6 Max Alarm and AN6 Min Alarm, it is important if AN5 Alarm Setup _ No) (15)	0...20	(16)	0
AN6 Offset	probe 6 calibration (15)	-20...20	(16)	0
AN6 4-20mA Type	unit of measure (if AN6 Type = 4-20 mA; %RH = percentage of relative humidity, bar = bar, °C = ° Celsius; °F = °Fahrenheit; Hz = Herz; mA = milliAmpere; N = Newton) (15)	---	flag	%RH
AN6 4-20mA Min	minimum value of the range of the transducer 6 (if AN6 Type = 4-20 mA) (15)	-99...999	pts	0
AN6 4-20mA Max	maximum value of the range of the transducer 6 (if AN6 Type = 4-20 mA) (15)	-99...999	pts	100
AN6 dec. point	decimal point position (if AN6 Type = 4-20 mA) 0= no decimal values, 1 = 1 decimal value, 2 = 2 decimal values) (15)	0/1/2	num	0

NOTE

(2) if the parameter has value Yes, the instrument will print the set up as soon as you will quit the configuration parameters setting procedure
(3) in order to activate the Daily Report printing mode, the parameter Print Hour must have values different from Off as well; to activate the Historical Report printing mode, the parameter Remote Print must have value Yes as well
(4) as soon as you will quit the configuration parameters setting procedure, the parameter will automatically get value No
(5) if you change the value of this paramlter the stored data will be cancelled
(6) the unit of measure depends on the parameters AN1 Type, Celsius/Fahr. and AN1 4-20mA Type
(7) unless the parameter N. Probe has value 2, the parameter will not be showed

(8) the unit of measure depends on the parameters AN2 Type, Celsius/Fahr. and AN2 4-20mA Type
(9) unless the parameter N. Probe has value 1 or 2, the parameter will not be showed

(10) the unit of measure depends on the parameters AN3 Type, Celsius/Fahr. and AN3 4-20mA Type
(11) unless the parameter N. Probe has value 1,2 or 3, the parameter will not be showed

(12) the unit of measure depends on the parameters AN4 Type, Celsius/Fahr. and AN4 4-20mA Type
(13) unless the parameter N. Probe has value 1,2,3 or 4, the parameter will not be showed

(14) the unit of measure depends on the parameters AN5 Type, Celsius/Fahr. and AN5 4-20mA Type
(15) unless the parameter N. Probe has value 1,2,3,4 or 5 the parameter will not be showed

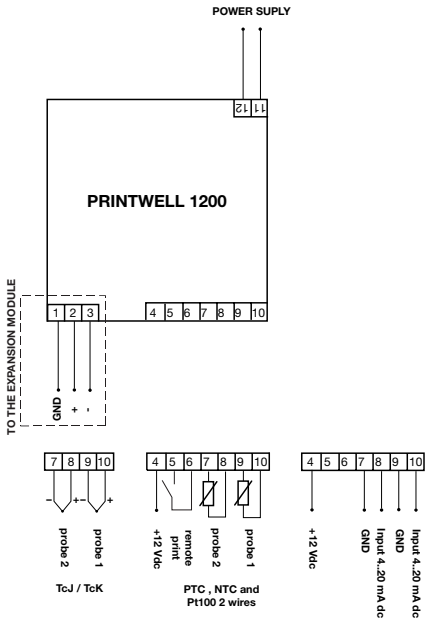
(16) the unit of measure depends on the parameters AN6 Type, Celsius/Fahr. and AN6 4-20mA Type.

(*) PLEASE NOTE: Setting ANx* dec. point you will automatically update parameters ANx 4...20mA Max and ANx 4...20mA Min.
Example:
ANx dec. point = 0 -> value 74
ANx dec. point = 1 -> value 7,4
ANx dec. point = 2 -> value 0,74

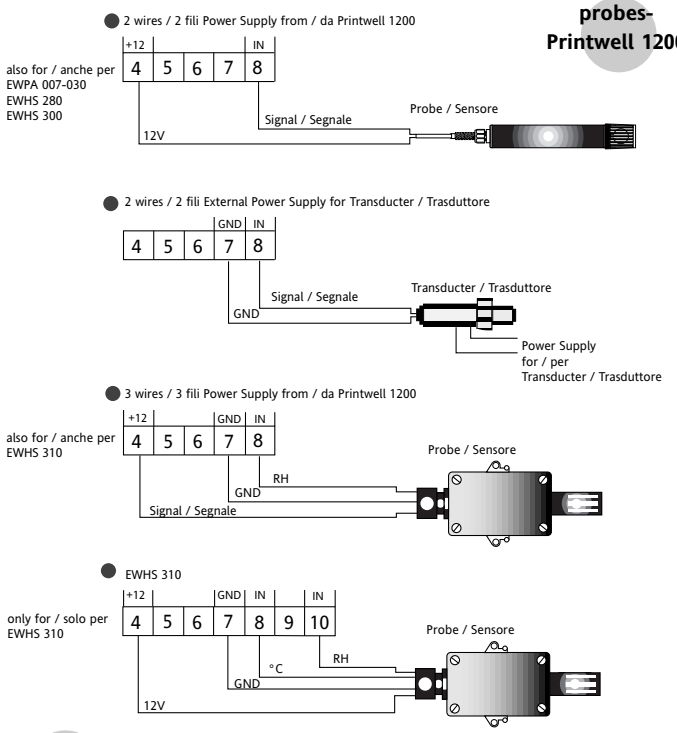
***(x=1...6)**

CONNECTIONS

Printwell 1200

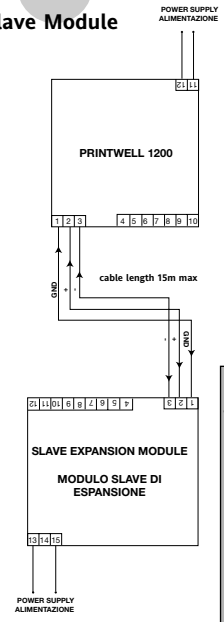


probes- Printwell 1200



connection with probes

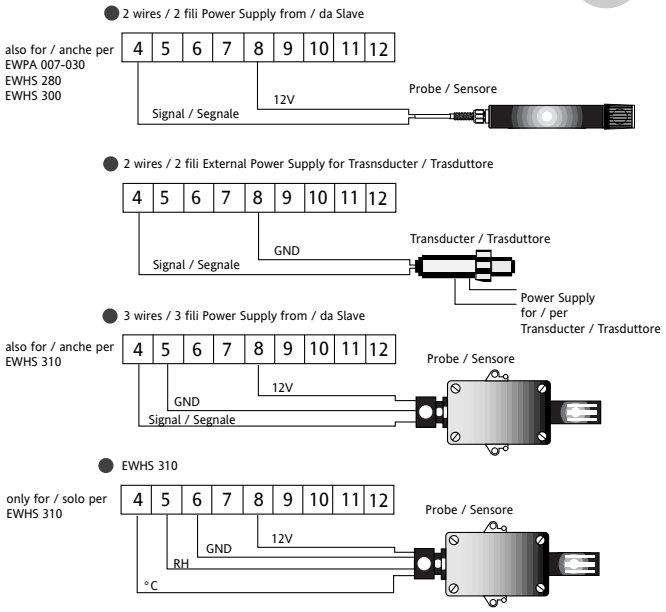
connection Master- Slave Module



PLEASE NOTE:
The distance between Printwell 1200 Master module and Printwell 1200 Slave Expansion module should be at least 15m.

Use a shield twisted cable, with double reinforced insulation, to prevent EMC disturbs in critical electromagnetic environments

probes- Slave Module



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