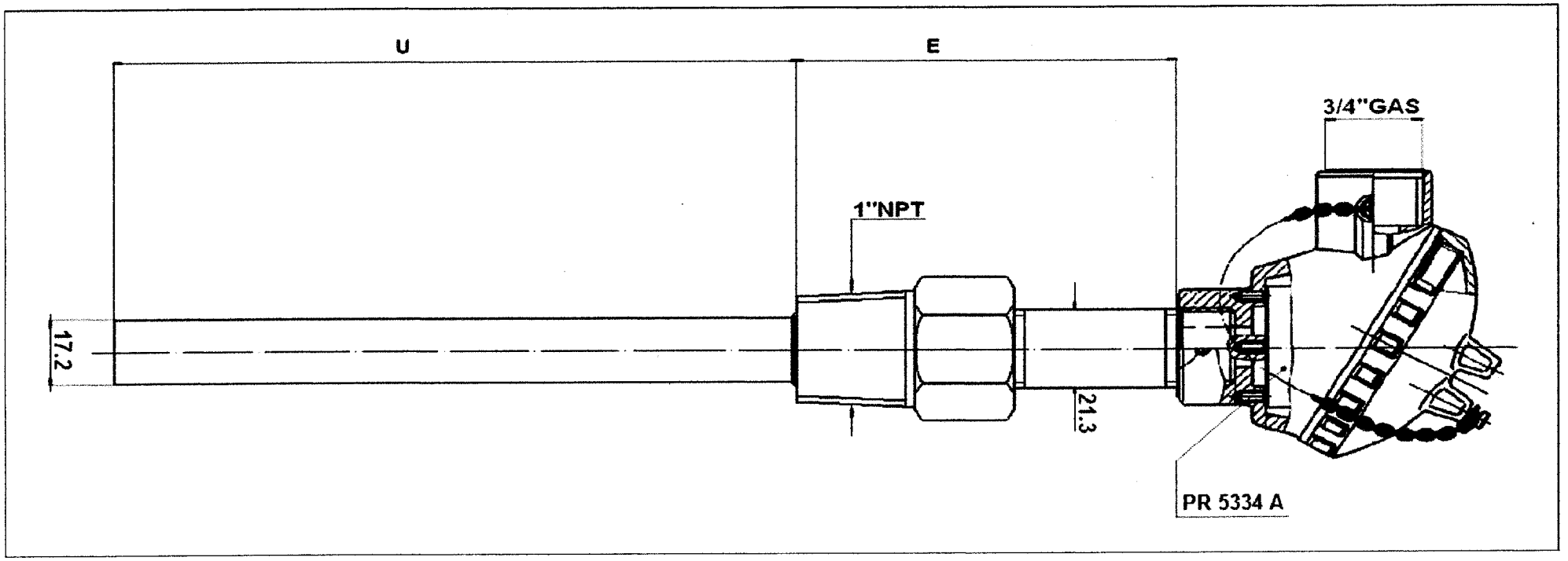
Sigla Tag n.	Elemento Element		Tipo Type		Lunghezza Lenght		Range 4÷20 mA (°C)
	Termocoppia Thermocouple	Termoresistenza Resistance Th.	Singolo Single	Doppio Double	U	E	
TE/TT 64.1	K		•		500	250	0÷500
TE/TT 64.2	K		•		500	250	0÷500

1. Transmitter Mod. PR 5334 A
2. Thermowell from pipe in AISI 316, process connection 1" NPT-M

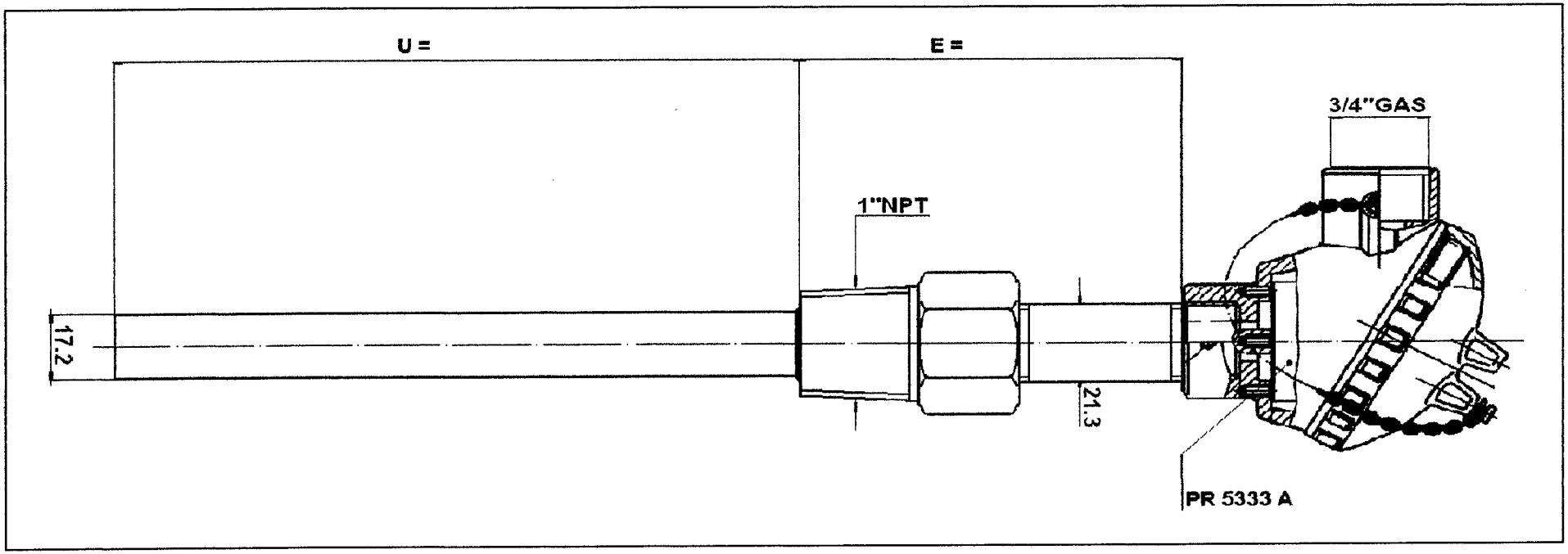


STA *di Lazzarini Bernardo*
20092 Cinisello Balsamo (MI) Italy
Via P. da Volpedo, 20
Tel +39.02.612.90.696
Fax +39.02.61.84.572
E-mail: lazzarini@stalazzarini.it

Customer	**Ballestra S.p.A.**
P. Order n.	**101663**
Date	**16/09/2010**
Job	**C1E35Z**
Draw n.	**STA-110.101663B**

Sigla Tag n.	Elemento Element		Tipo Type		Lunghezza Lenght		Range 4÷20 mA (°C)
	Termocoppia Thermocouple	Termoresistenza Resistance Th.	Singolo Single	Doppio Double	U	E	
TET 64.9A		A	•		500	150	0÷250
TET 64.9B		A	•		500	150	0÷250
TET 64.9C		A	•		500	150	0÷250
TE/TT 64.6		A	•		500	150	0÷200

1. Transmitter Mod. PR 5333 A
2. Thermowell from pipe in AISI 316, process connection 1" NPT-M



STA *di Lazzarini Bernardo*
20092 Cinisello Balsamo (MI) Italy
Via P. da Volpedo, 20
Tel +39.02.612.90.696
Fax +39.02.61.84.572
E-mail: lazzarini@stalazzarini.it

Customer	**Ballestra S.p.A.**
P. Order n.	**101663**
Date	**16/09/2010**
Job	**C1E35Z**
Draw n.	**STA-110.101663A**

2-WIRE
PROGRAMMABLE TRANSMITTER

PRetop 5333

Contents

EC DECLARATION OF CONFORMITY

As manufacturer

PR electronics A/S
Lerbakken 10
DK-8410 Rønde

hererby declares that the following product:

Type: 5333
Name: 2-Wire programmable transmitter

is in conformity with the following directives and standards:

The EMC Directive 2004/108/EC and later amendments

EN 61326-1 : 2006

For specification of the acceptable EMC performance level, refer to the electrical specifications for the module.

The ATEX Directive 94/9/EC and later amendments

EN 60079-0 : 2006, EN 60079-11 : 2007,
EN 60079-15 : 2005 and EN 60079-26 : 2007
EN 61241-0 : 2006 and EN 61241-11 : 2006
ATEX certificate: KEMA 10ATEX0003 X (5333A)
ATEX certificate: KEMA 03ATEX1535 (5333D)

Notified body

KEMA Quality B.V. (0344)
Utrechtseweg 310, 6812 AR Arnhem
P.O. Box 5185, 6802 ED Arnhem
The Netherlands

Rønde, 10 February 2010

Kim Rasmussen
Manufacturer's signature

2-WIRE PROGRAMMABLE TRANSMITTER
PRetop 5333

- *RTD or Ohm input*
- *High measurement accuracy*
- *3-wire connection*
- *Programmable sensor error value*
- *For DIN form B sensor head mounting*

Application

- Linearised temperature measurement with Pt100...Pt1000 or Ni100...Ni1000 sensor.
- Conversion of linear resistance variation to a standard analogue current signal, for instance from valves or Ohmic level sensors.

Technical characteristics

- Within a few seconds the user can program PR5333 to measure temperatures within all RTD ranges defined by the norms.
- The RTD and resistance inputs have cable compensation for 3-wire connection.

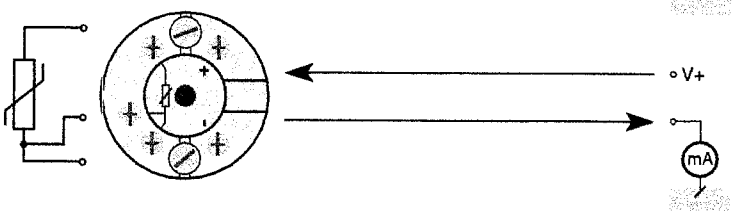
Mounting / installation

- For DIN form B sensor head mounting. In non-hazardous areas the 5333 can be mounted on a DIN rail with a special fitting.
- **NB:** As Ex barrier for 5333D we recommend 5104B, 5114B, or 5116B.

APPLICATIONS

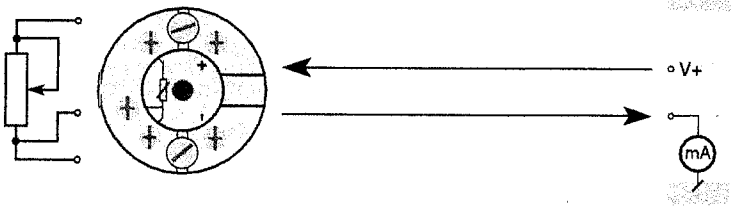
2-wire installation
in control room

RTD to 4...20 mA



2-wire installation
in control room

Resistance to 4...20 mA



Order: 5333 ___

Type	Version	
53333	Standard CSA, FM & ATEX	: A : D

Electrical specifications

Specifications range:

-40°C to +85°C

Common specifications:

Supply voltage, DC
- Standard ..... 8...35 V
- CSA, FM & ATEX ..... 8...30 V

Internal consumption ..... 25 mW...0.8 W
Voltage drop ..... 8 VDC
Warm-up time ..... 5 min.
Communications interface ..... Loop Link
Signal / noise ratio ..... Min. 60 dB
Response time (programmable) ..... 0.33...60 s
Signal dynamics, input ..... 19 bit
Signal dynamics, output ..... 16 bit
Calibration temperature ..... 20...28°C

Accuracy, the greater of general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤ ±0.1% of span	≤ ±0.01% of span / °C

Basic values		
Input type	Basic accuracy	Temperature coefficient
RTD	≤ ±0.3°C	≤ ±0.01°C/°C
Lin. R	≤ ±0.2 Ω	≤ ±20 mΩ / °C

EMC immunity influence ..... < ±0.5% of span

Effect of supply voltage variation..... ≤ 0,005% of span / VDC
Vibration ..... IEC 60068-2-6 Test FC
Lloyd's specification no. 1..... 4 g / 2...100 Hz
Max. wire size..... 1 x 1.5 mm^2 stranded wire
Humidity ..... < 95% RH (non-cond.)
Dimensions..... Ø 44 x 20.2 mm
Protection degree (enclosure / terminal)..... IP68 / IP00
Weight ..... 50 g

Electrical specifications, input:

RTD and linear resistance input:

RTD type	Min. value	Max. value	Min. span	Standard
Pt100	-200°C	+850°C	25°C	IEC 60751
Ni100	-60°C	+250°C	25°C	DIN 43760
Lin. R	0 Ω	10000 Ω	30 Ω	-----

Max. offset..... 50% of selec. max. value
Cable resistance per wire (max.)..... 10 Ω
Sensor current..... > 0.2 mA, < 0.4 mA
Effect of sensor cable resistance (3-wire)..... < 0.002 Ω / Ω
Sensor error detection ..... Yes

Output:

Current output:

Signal range ..... 4...20 mA
Min. signal range..... 16 mA
Updating time..... 135 ms
Load resistance..... ≤ (V_{supply}- 8) / 0.023 [Ω]
Load stability..... < ±0.01% of span / 100 Ω

Sensor error detection:

Programmable..... 3.5...23 mA
NAMUR NE43 Upscale ..... 23 mA
NAMUR NE43 Downscale..... 3.5 mA

Of span = Of the presently selected range

Ex approval - 5333A:

KEMA 10ATEX0003 X..... II 3 GD Ex nA [nL] IIC T4...T6 or
II 3 GD Ex nL IIC T4...T6 or
II 3 GD Ex nA [ic] IIC T4...T6 or
II 3 GD Ex ic IIC T4...T6

ATEX Installation Drawing No..... 5333QA02

Ex / I.S. approval - 5333D:

KEMA 03ATEX1535..... II 1 G Ex ia IIC T4 or T6
II 1 D Ex iaD

Max. amb. temperature for T4 ..... 85°C
Max. amb. temperature for T6 ..... 60°C
ATEX, applicable in zone..... 0, 1, 2, 20, 21 or 22
ATEX Installation Drawing No. 5333QA01

FM, applicable in..... IS, Class I, Div. 1, Group A, B, C, D
IS, Class I, Zone 0, AEx ia IIC
FM Installation Drawing No..... 5300Q502

CSA, applicable in..... IS, Class I, Div. 1, Group A, B, C, D, Ex ia IIC
IS, Class I, Zone 0, AEx ia IIC
CSA Installation Drawing No. 533XQC03

Marine approval:

Det Norske Veritas, Ships & Offshore..... Standard for Certification No. 2.4

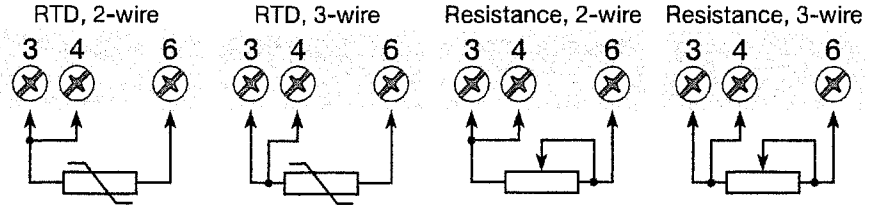
GOST R approval:

VNIIM & VNIIFTRI, Cert. no..... See www.prelectronics.com

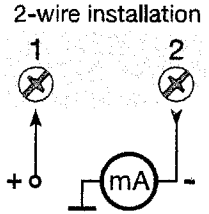
Observed authority requirements:	**Standard:**
EMC 2004/108/EC	EN 61326-1
ATEX 94/9/EC.....	EN 60079-0, EN 60079-11, EN 60079-15, EN 60079-26, EN 61241-0, EN 61241-11
FM	3600, 3611, 3610
CSA, CAN / CSA.....	C22.2 No. 157, E60079-11, UL 913

CONNECTIONS

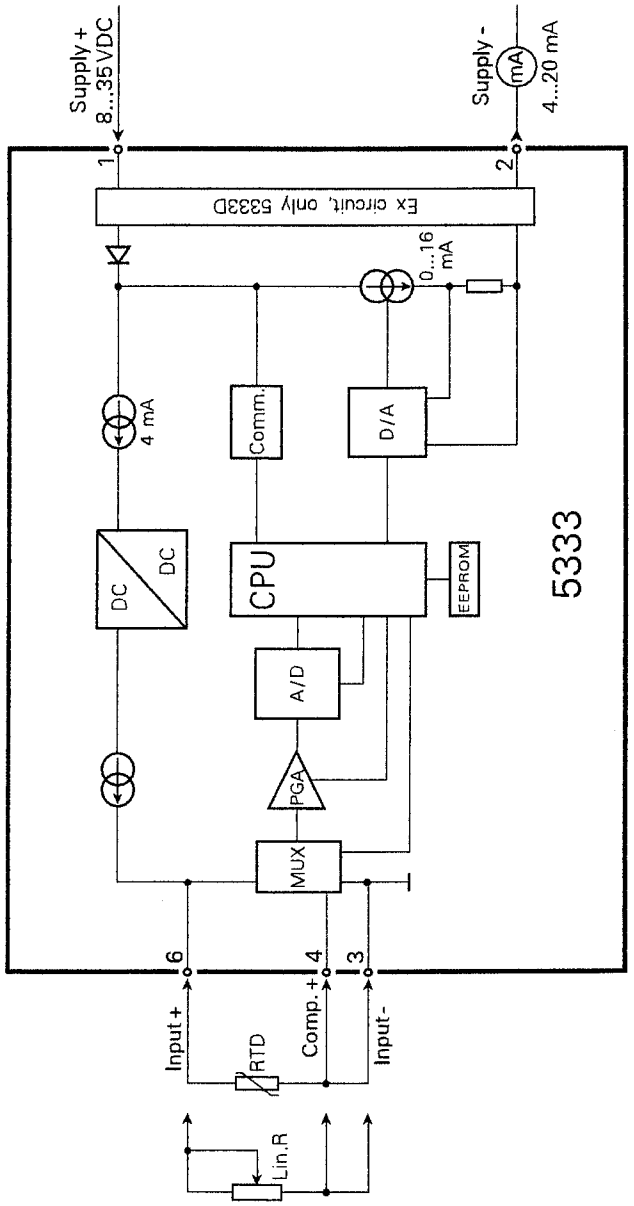
Input:



Output:



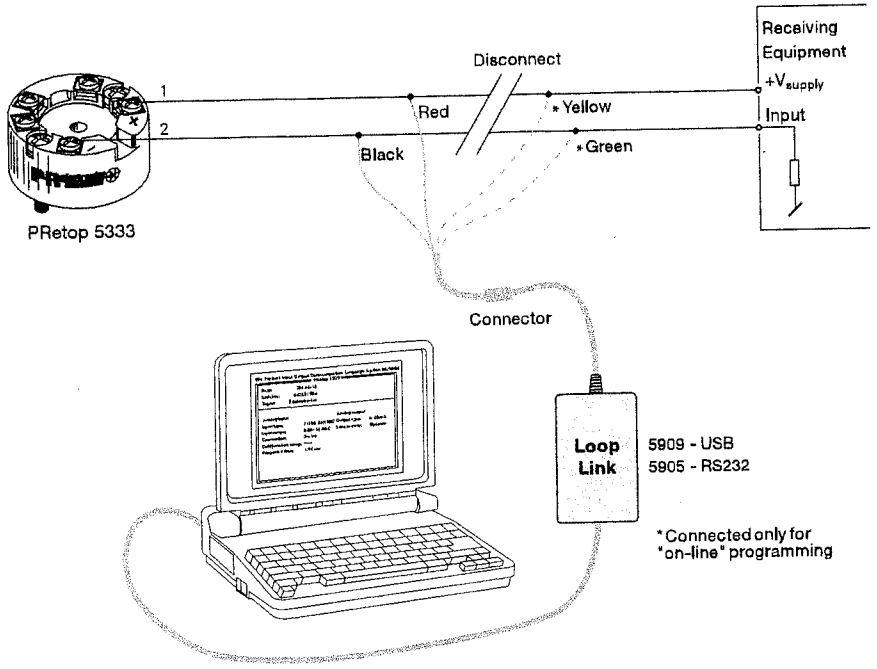
BLOCK DIAGRAM



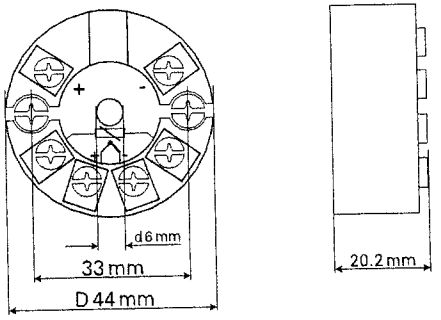
PROGRAMMING

- Loop Link is a communications interface that is needed for programming PRetop 5333.
- For programming please refer to the drawing below and the help functions in PReset.
- Loop Link is not approved for communication with modules installed in hazardous (Ex) areas.

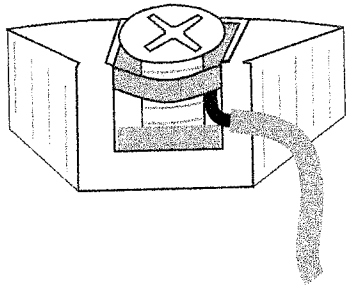
Order: Loop Link



Mechanical specifications



Mounting of sensor wires



Wires must be mounted between the metal plates.