Ethernet Transmitter Series PR 5220

– Ethernet TCP|IP Connection for
  Remote Control
  – Configuration via VNC
  – OPC Server

– High accurate signal conversion with
  an internal resolution of 4.8 Mio. counts

– Modbus TCP for PC and PLC connections

– Webservice via SOAP|UPnP

– W & M approval with remote display for
  10,000 e acc. to EN 45501|OIML R76

– Calibration without weights
  (Smart Calibration)

– High accurate analogue output 0/4 –20 mA

– Serial Interface RS485/422
  (connection of Sartorius digital scales)

– Supply voltage 24 V_{DC}

– Protection class IP20, DIN Rail-mounting

– Option: Profibus, DeviceNet
  Profinet, Ethernet|IP

Product profile
The new Ethernet Transmitter PR 5220 provides an easy and reliable solution for weighing of process hopper scales with strain gauge load cells in process automation applications.

The PR 5220 Transmitter sets new standards in Process automation. The standard Ethernet TCP|IP interface allows an easy integration into existing PC networks. Information can be transferred into supervisory systems with the integrated OPC-Server technology.

The IP address can be assigned via the 3 following possibilities:
1. Manual input of the IP address by the user
2. Automatic assignment from network server (DHCP)
3. Auto IP, self-assign by the instrument

If the IP Address is not known by the user, a small tool is scanning the complete network and displays IP address and name of all Sartorius instruments that are connected to the network.

With this function all instruments|scales can be clearly identified. The tool will be delivered with the Process Transmitter and can be used without installation.

For the configuration of the VNC Technology is used. This function enable the user to start the homepage of the instrument in the Microsoft Internet Explorer and do the configuration online.
Additionally to this the tool ConfigureIt Professional is available. With this tool all configurations can be done online or offline and saved on the PC. This makes the administration of different systems very easy and well arranged.

All instruments provide a built-in RS422/485 serial interface using the very simple and versatile SMA-Standard protocol and the protocol for a remote display.
Additionally to this a high-performance 16 bit analogue output is available.

Three freely configurable digital In- and Outputs can control simple process functions, like limits.

The Transmitter is equipped with pluggable COMBICON screw terminals. This Terminals allow an easy installation and exchange of instruments.

The Ethernet Transmitter is specifically designed for use in typical control cabinets. It combines convenient DIN rail mounting with fast setup and straight forward configuration in a very simple way.

Take control direct on the display or via PC. Do you think about Wireless LAN? Use the possibilities of the Ethernet TCP|IP. Remote Service via the Internet, allows support from every point of the world.

The high-quality Sense-amplifier supports 4 and also 6 wire Load Cells. This allows connections over long distances without losing accuracy.

Additional security guarantees the fully galvanically isolated sensor input circuit and supply from supply voltage and all in-|output circuits.

Technical Data

Housing
Housing IP20
according to DIN 40050
Mounting on DIN Rail 35 mm
according to DIN 46277
material: polyamide
RoHS conform

Dimensions
Version /00:
99 × 116 × 45 mm
Versions /01, /04, /06, /07
99 × 116 × 68 mm

Supply Voltage
24 V_{DC}, +/-20%

Power Consumption
6 W / 8 W (Versions /01, /04, /06, /07)

Control outputs
Quantity: 3
opto-isolated output, passive,
Voltage: max. 30 V_{DC}
Current: max. 30 mA
Functions: Limits, weight status...

Control Inputs
Quantity: 3,
opto-isolated input, passiv, Functions:
zero setting, taring...
Voltage: max. 30 V_{DC}
Current: max. 10 mA

In–|Output
All I|O circuits fully galvanically isolated
from sensor input and supply.

Load cell connection
All strain gauge load cells;
6- or 4-wire connection

Load cell supply
12 V, short-circuit proof.
External load cell supply possible.

Minimum load impedance
min. 75 Ω
e.g. 6 load cells with 600 Ω
or 4 load cells with 350 Ω

Measuring principle
Measuring amplifier:
Delta-Sigma converter
Measuring time:
min 5 ms - max. 1600 ms

Input range
7.5 nV (appr. 4.8 Mio. div.)
Usable resolution: 0.2 µV/d

Input signal
Measuring signal: 0 to 36 mV
(for 100 % nominal load)

W&M approval (in preparation)
10,000 e class III acc. to EN 45501;
according to. OIML R76,
min. verification interval: 0.5 µV/e

Linearity
< 0.002%

Temperature effects
Zero: TK_0 m < 0.02 µV/K RTI
Span: TK_{span} < +/- 2 ppm/K

Digital filter for load cell
4th order (low pass), Bessel, aperiodic
or Butterworth

Ethernet interface (functions)
– Ethernet TCP|IP and Modbus TCP
– Definition of an IP adress:
  – AutoIP
  – DHCP Server classification
  – manual entering of an IP adress
– Automatic detection of signal transmission
  and corresponding change over (cross-over
  or patch cable)
– Webservice via SOAP|UPnP
  (Simple Object Access Protocol)
– Synchronal Modbus UDP

Status Indicator
Status LEDs to signal operation
and error conditions.

Analogue output
0/4 ... 20 mA,
internal resolution 16 bit,
usable stepwidth: 0.5 µA
max. load 500 Ω
user configurable

Serial Interfaces
RS422/485 via screw terminals
Protocol: Remote Display, SMA and
Sartorius digital scales (XBPI–protocol)

Electrical connections
All electrical connections
via modular screw terminals for 2.5 mm^2
max. System Phoenix/COMBICON

Environmental conditions
Temperature
W&M: –10°C to +40°C
Operation: –10°C to +50°C
Storage: –40°C to +70°C

Weight
Version /00:
Net: 0.29 kg
Versions /01, /04, /06, /07
Net: 0.35 kg

The ConfigureIt Professional program has the following features:

– Searching for an instrument in a network

– Creating and modifying an instrument configuration

– Entering the parameters of an instrument

– Calibration of an instrument using the following methods:
  – with test weights
  – by mV/V
  – using the load cell data ('smart calibration')

– Loading an instrument configuration from an instrument

– Storing an instrument configuration in an instrument or in a file

– Copying instrument configurations (cloning)

– Creating a documnt (PDF, XLS, etc.) with the instrument configuration

The Functionality VNC allows the following functions:

– Opens the internal Web-Page with the direct entry of the IP adress into the standard Web Browser

– Showing and modifying an instrument configuration

– Calibration of an instrument using the following methods:
  – with test weights
  – mV/V
  – using the load cell data ('smart calibration')

– Displaying and printing the complete configuration

– Weight Indication on the PC Display

– Readout of the fault memory

Generate HTML side for Process Overview:

– Weight Indication on the PC Display

– Easy creation of HTML side by standard html programming

– Weight and status can be easily implemented as standard command
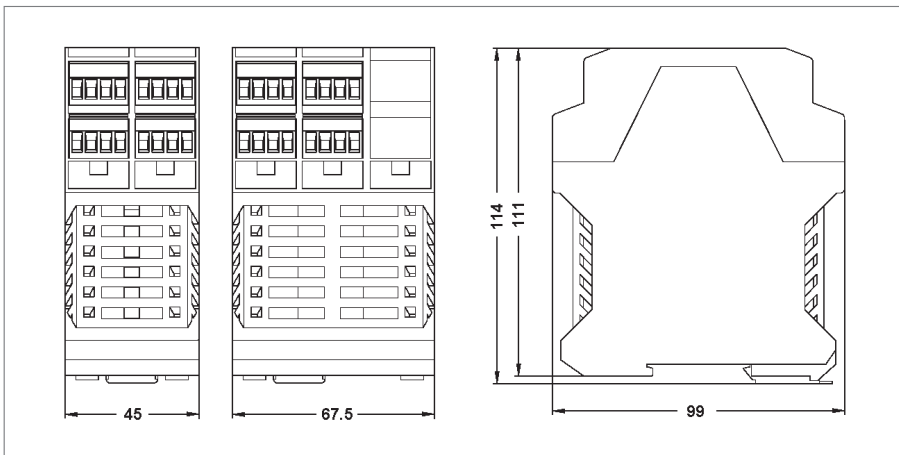
– Weight display is "live"

PR 5220/00
Ethernet Transmitter

PR 5220/01
with Profibus-DP

PR 5220/04
with DeviceNet

PR 5220/06
with Profinet

PR 5220/07
with Ethernet|IP

Dimensions in mm

Order information

Type	Description	Order code
PR 5220/00	Ethernet Transmitter, 24 V_{DC}	9405 152 20001
PR 5220/01	Ethernet Transmitter with Profibus-DP, 24 V_{DC}	9405 152 20011
PR 5220/04	Ethernet Transmitter with DeviceNet, 24 V_{DC}	9405 152 20041
PR 5220/06	Ethernet Transmitter with ProfiNet	9405 152 20061
PR 5220/07	Ethernet Transmitter with EtherNet|IP	9405 152 20071

Delivery: incl. CD containing Manual, Configuration Tool and OPC Server.