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# Programmable transmitter 6746 with frequency output

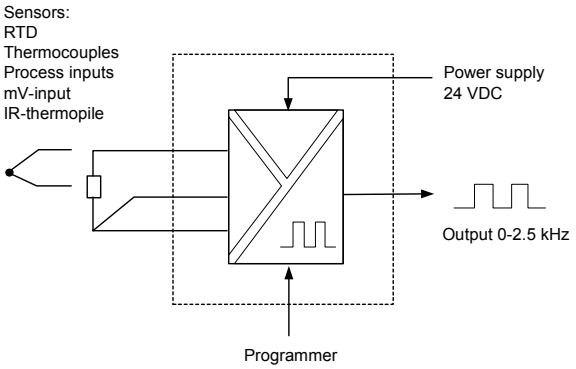

- **Thermocouples B,C,D,E,G,J,K,L,N,R,S,T**
- **RTD sensors Pt100, Pt500, Pt1000 and Ni100, Ni1000**
- **Process inputs: 0..20mA, 4..20 mA, -20 .. +20 mA 0..5 V, 0..10 V, -10 .. +10 V**
- **mV-range -100 .. +100 mV**
- **IR-thermopile sensors**
- **Configuration by PC or with a hand held programmer**
- **Galvanic isolation between input, output and power supply**
- **Output 0..2.5 kHz**
- **Power supply 24VDC**

Transmitter 6746 is exceptionally versatile accepting almost all the most common temperature sensor inputs and process inputs as well. The transmitter has frequency output 0-2.5 kHz. The use of counters provides an economical means of transmitting measuring data to instruments where an analog input is not possible or when a more cost-effective solution is sought after.

The programming of the transmitter is simple by the MekuWin configuration software or with the hand held programmer 6790, which is especially practical in field conditions.
Emissivity can be set according to the measuring target.

A high measuring accuracy is reached by a 16-bit analog converter, the linearity of which is < 0,005%. Conversion accuracy of the output is 0,05% wihout linearization error of the sensor. Inputs and outputs are galvanically isolated from each other and the power supply.
The transmitter is an excellent choice when one wants to reduce the number of instruments in storage by replacing several models with one transmitter.

**Schematic drawing of 6747**




## Technical specification:

**Thermocouples:**

| Sensor | Range | Linearity | | |
|---|---|---|---|---|
| E | -100.... 900°C | < 0.3°C | -50.... 900°C | |
| J | -150.... 900°C | < 0.3°C | -50... 900°C | |
| K | -150.... 1350°C | < 0.4°C | -40... 1300°C | |
| L | -100.... 900°C | < 0.4°C | -50... 900°C | |
| T | -150... 400°C | < 0.3°C | -150... 400°C | |
| N | 0....1300°C | < 0,4°C | 0.... 1300°C | |
| R | 0....1700°C | < 0.4°C | 400.... 1700°C | (<1°C < 300 °C) |
| S | 0....1700°C | < 0.4°C | 300.... 1700°C | (<1°C < 300 °C) |
| C (W5) | 0....2200°C | < 0.4°C | 400.... 2200°C | (<0.4°C< 400 °C) |
| D (W3) | 0....2200°C | < 0.4°C | 500.... 2200°C | (<1°C < 500 °C) |
| B | 400... 1700°C | < 0.5°C | 400.... 1700°C | |
| G (W) | 1000.. 2200°C | < 0.5°C | 1000...1700°C | (<3 °C >1700 °C) |

| | |
|---|---|
| Range selection | freely selectable |
| Calibration accuracy | < 0.1 % of max. span |
| Cold junction compensation | < 0.05 °C / °C |
| Sensor wire influence | < 10 kohm, negligible |

| | |
|---|---|
| **RTD's:** | Pt100, Pt500, Pt1000, Ni100 |
| Range | -200..+700 °C (Pt100, Pt500)<br>-200...+300 °C (Pt1000)<br>-60....+175 °C (Ni100) |
| Sensor connections | 3-, 4-wire connection |
| Max. sensor wire resistance | <30 ohm /wire |
| Sensor current | 0.3 mA typical |
| Accuracy | 0.1 % of reading (°C) +0.1 °C |
| Calibration accuracy | ±0.1 °C (0 °C) |
| Linearity | < 0.1 °C (-200..+700 °C) |
| Sensor error correction | freely offset and span corrections |
| Other resistance inputs | 0-1000 ohm, potentiometer 50-500 ohm |

| | |
|---|---|
| **mV-inputs:** | -100..+100 mV |
| Accuracy | 0.02 % of span |
| Linearity | 0.01 % of span |
| Input impedance | >10 Mohm |

| | |
|---|---|
| **Process inputs:** | 0..20 mA, 4..20 mA, -20..+20 mA,<br>0..5, 0..10 V, -10..+10V |
| Input impedance | Current: 5 ohm and voltage: 1 Mohm |
| Accuracy | 0.02 % of span |
| Linearity | 0.01% of span |

**IR-sensors:**

| | |
|---|---|
| | Exergen 140F-K and 440F-K |
| Range 140F-K (60°C) | -40...+350°C (linearized range) |
| Range 440F-K (220°C) | -30...+600°C (linearized range) |
| Emissivity correction | selectable by PC or programmer |

**Output:**

| | |
|---|---|
| Output | up to max. 2.5 kHz, Galvanically isolated |
| Output scaling | freely scaleable on the whole range, reverse function selectable |
| Sensor break | programmable 0 or 2,5 kHz |
| Voltage level | 0/15V |
| Max. load | max. 20 mA (1 kohm) |
| Configuration | by MekuWin software in PC or hand held programmer 6790 |

**General:**

| | |
|---|---|
| Power supply | 24 VDC, ±15 % |
| Power consumption | max. 40 mA |
| Temperature effects | <0.005 %/°C of input range |
| Galvanic isolation | input/output 1000 VDC/ 1 min. |
| Measuring rate | 4 samples/s. |
| AD-converter | 16 bit |
| Output DAC | 12 bit |
| Operating temperature | 0..60 °C |
| Ambient storage | -20....+70 °C |
| Humidity (non-condensing) | 0..95 %RH |
| Weight | 80 g |
| Connection | 1.5 mm², AWG 16 |
| Protection | IP20 |

## How to order:

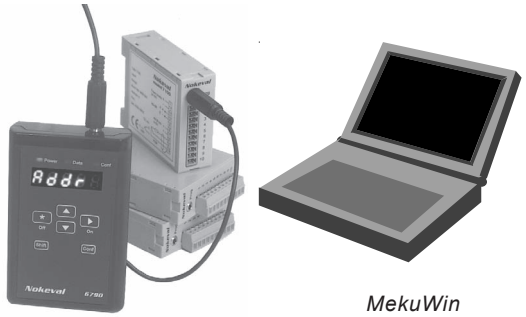
The transmitter can be freely programmed by configuration devices. The transmitters can also be delivered with customer settings according to the ordering instructions below.

**Code** **6746 - Pt100 - 0/600**

Transmitter type
Sensor type
Measuring range

Example 6746-Pt100-600, sensor Pt100, measuring range 0..600 °C, output 0..2,5 kHz

**Optional:**
Configuration software MekuWin for a PC
Hand held programmer 6790

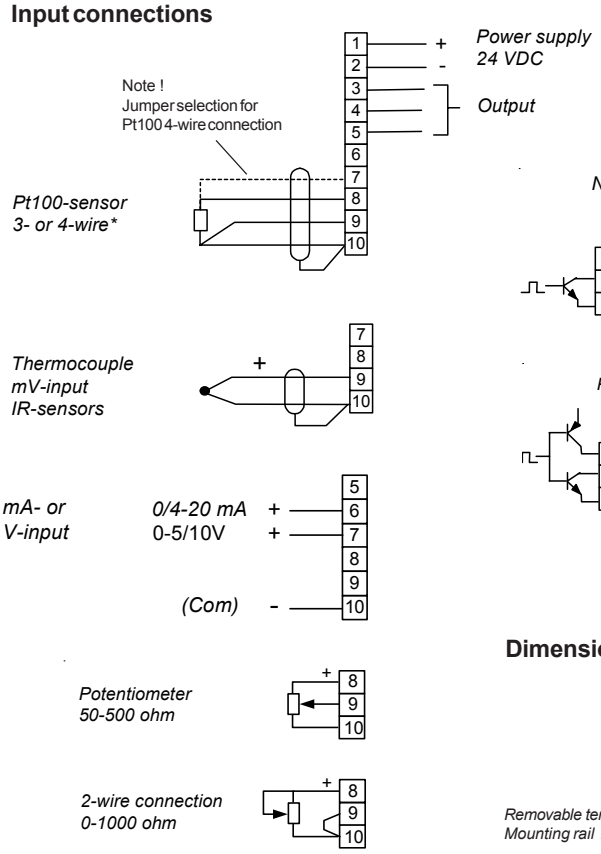



*Programmer 6790*

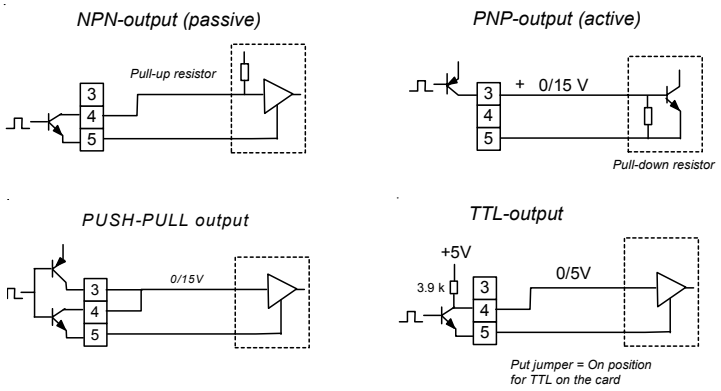
*MekuWin software*

## Connections

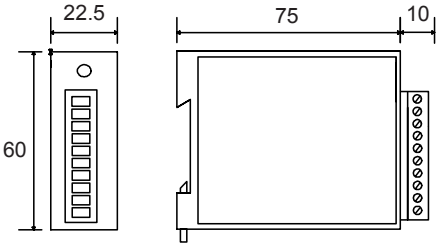
### Input connections




### Output connections




### Dimensions




*Removable terminals <1.5mm²*
*Mounting rail DIN 50022 (35mm)*