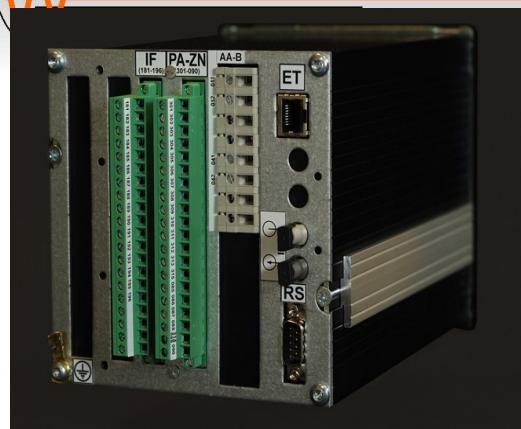
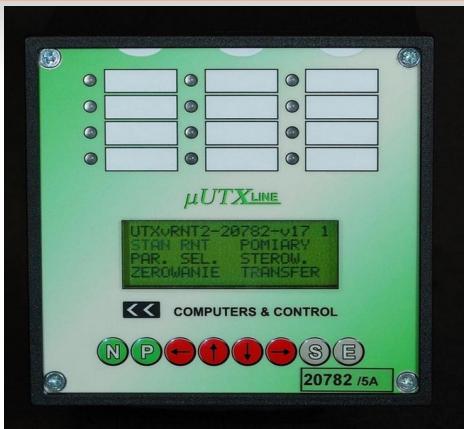


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uUTXvRNT**VOLTAGE REGULATOR**

uUTXvRNT is a device with very expanded regulation, recording and remote control functions, destined to use in all the on-load tap changer regulation systems, on any high and medium voltage power lines. Operating with directly earthed, compensated or isolated neutral point provides fast and reliable regulation. Extended functions of voltage drop compensation, 24-hours, scheduled, weekend and holiday settings, disturbance and event recording, voltage quality recording enable realization of the most sophisticated applications.

uUTXvRNT2 is designed to control of two-windings transformers
uUTXvRNT3 is designed to control of three-windings transformers

Characteristic:

uUTXvRNT can be characterized by following features :

- multi-processor measuring and regulating system
- fully digital information processing
- operation with two or three-windings transformers
- operation in automatic or manual mode
- automatic summer/winter time zone adjust
- advanced logic function module with selectable functor
- four main regulation rules:
 - based on voltage U1 of circuit 1
 - based on voltage U2 of circuit 2
 - based on mean value of voltages U1 and U2
 - based on max value (U1,U2)
- up to three /one weekend/ ten holidays settings for controlled voltage level
- all-year programmable calendar with freely adjusted activity zones
- three separate configurations sets with on-line switching possibility
- galvanic separation of inputs and outputs (analogue and binary)
- compensation type XR and Z, set independently for each measuring circuit
- overcurrent protection of tap changer's
- systems of energy quality control
- functions of tap changer remote control
- operation reporting, event and disturbance recording
- local text display, 12 synoptic's led indicator and 8 separate keys keyboard
- presentation of measured values on local display and transmit to remote control system
- simultaneously operated IEC 870-5-103 and CC-Bus protocols
- tap changer and operational time counter
- permanent self-diagnostic function
- three password – protected access levels
- possibility of full device control /setting adjust /reading and data presentation via SAZ-2000 program

**uUTXvRNT**

Basic technical data

**Analog inputs**

- Current input nominal value (I_n)
- Voltage input nominal value (U_n)
- Max. rated burden of current inputs
- Max. rated burden of voltage inputs
- Input's insulation withstand
- Analog input amount
- Measuring range:
 - for I_{L1}, I_{L2}
 - for UL_1, UL_2

Overload withstand

- Voltage inputs
- Current inputs for $I_n=1[A]$
- Current inputs for $I_n=5[A]$
- Dynamic withstand
 - for $I_n=1[A]$
 - for $I_n=5[A]$
- Measuring range:
 - 2 I_n
 - 1.75 U_n
- 3 U_n continuously
- 100 $I_n/1[s]$, 5 I_n continuously
- 100 $I_n/1[s]$, 2 I_n continuously
- 250 $I_n/20[ms]$
- 200 $I_n/20[ms]$

Binary outputs

Switching capacity
One relay - 250[V]AC/8.0[A], 250[V]DC/0.3[A]

Amount
8 freely programmable + 2 dedicated (BDI and AL function)

Binary inputs

- Insulation withstand
- Current consumption
- Inputs levels:
 - High voltage section
 - 3[kV] AC/DC, 5[kV] 5[us] pulse
 - 5[mA]/input
- Low voltage section
 - 110[V]DC nominal voltage case:
(0-60)[V] = FALSE, (70-121)[V] = TRUE
 - 220[V]DC nominal voltage case:
(0-145)[V] = FALSE, (165-242)[V] = TRUE
 - 12[V]DC nominal voltage case:
(0-8)[V] = FALSE, (9-30)[V] = TRUE
 - 24[V]DC nominal voltage case:
(0-16)[V] = FALSE, (18-30)[V] = TRUE

Note: Binary inputs accept also AC excitation

Amount of binary inputs
14 freely programmable

Casing

- Surface mounting case:
- 3U-28
- weight up to 4[kg]
- IP class 40 /option-IP65/
- Flush mounting case:
- 3U-28
- weight up to 4[kg]
- IP class 40 /option-IP65/

Allowable ratings

- Supply voltage:
- Operation temperature:
- Storage temperature:
- Storage humidity:

90-340[V]DC / 65-240[V]AC
-5°C to +50°C
-10°C to +60°C
40-80%

Interfaces

- CCBUS protocol :
- IEC 60870-5-103 protocol:
- CANBUS protocol (option):

RS232 and Ethernet (separate channel),
(optional fiber optic interface)
RS485, (optional fiber optic interface)
2 x RS485

Disturbance recorder

- Maximal capacity:
- Recorded binary inputs:
- Recorded analogue inputs:
- Pre-event time duration:
- Event time duration:

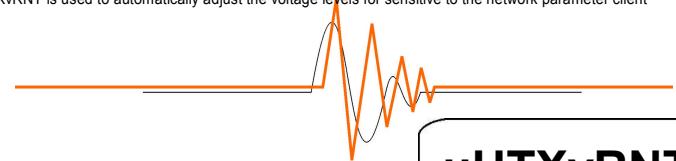
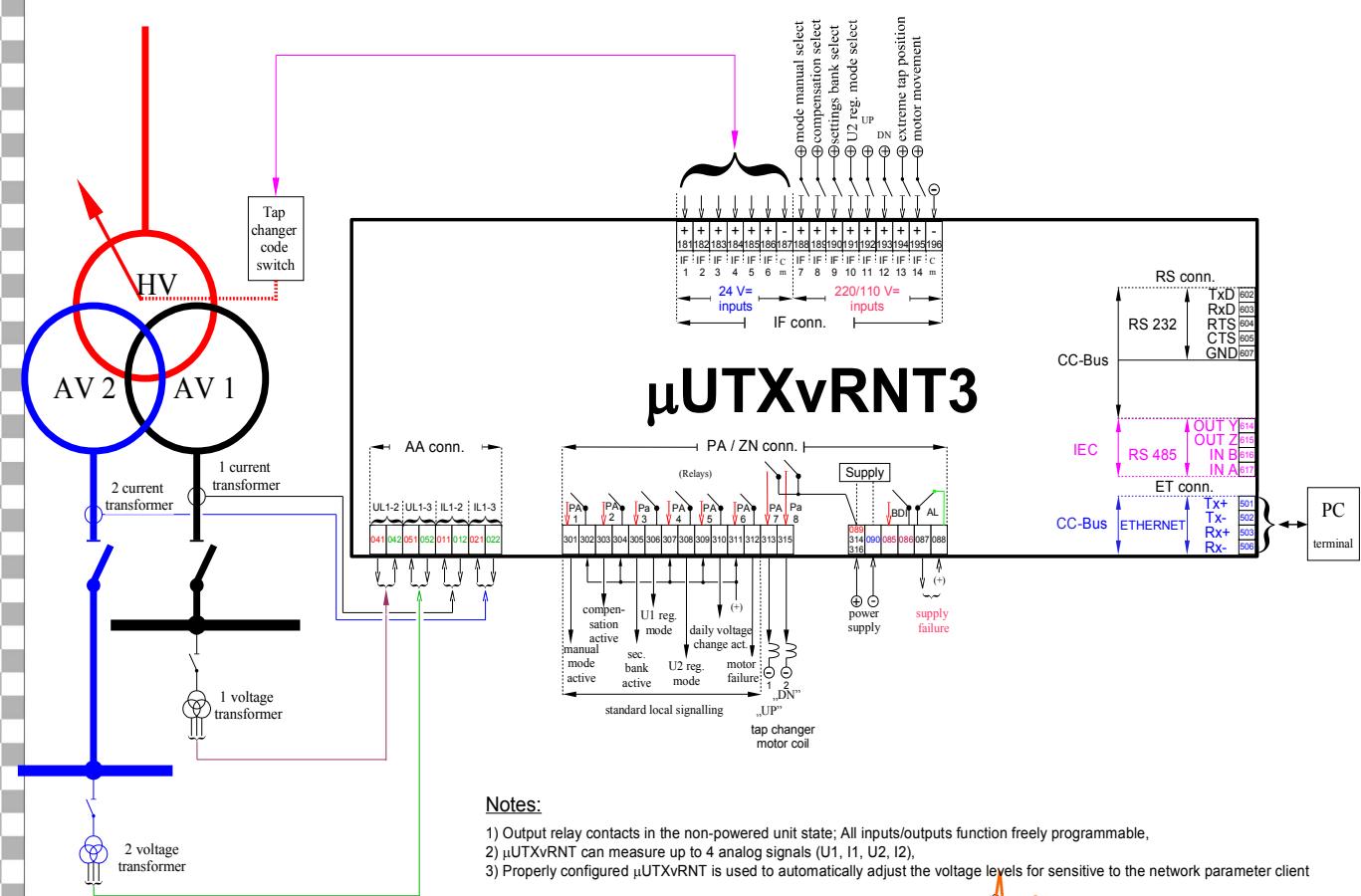
8 disturbances
14
up to 4
400[ms]
1900[ms]

Event recorder

- Capacity:

min. 1000 events (with separate time stamp)

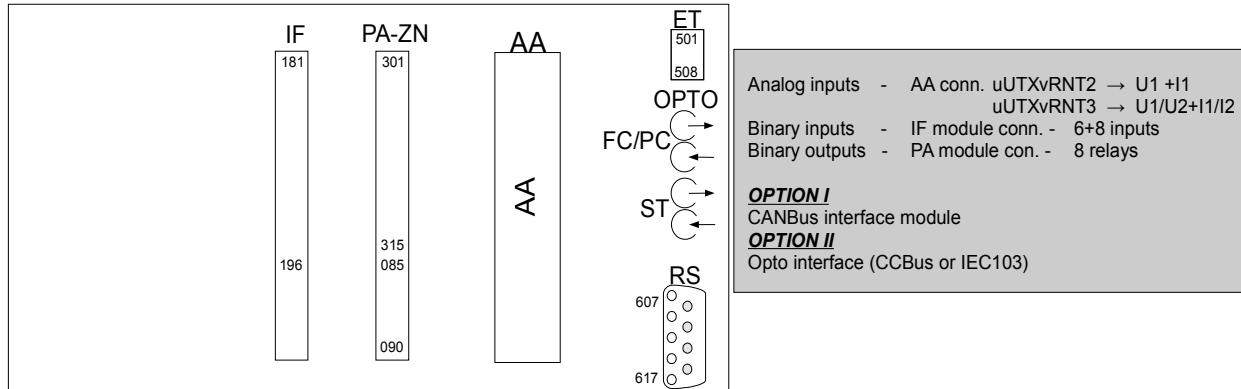
Example of μ UTXvRNT3 assembly diagram for HV/AV1/AV2 transformer



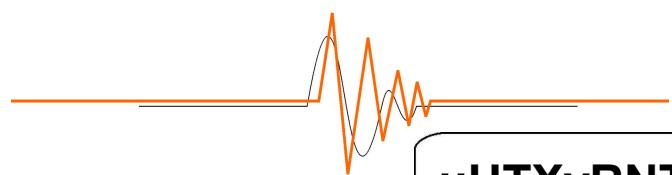
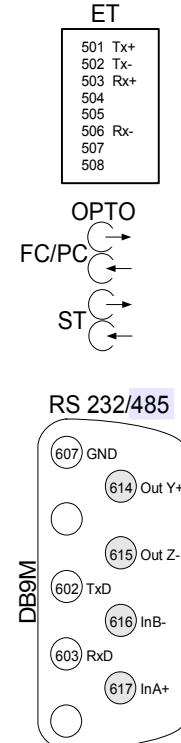
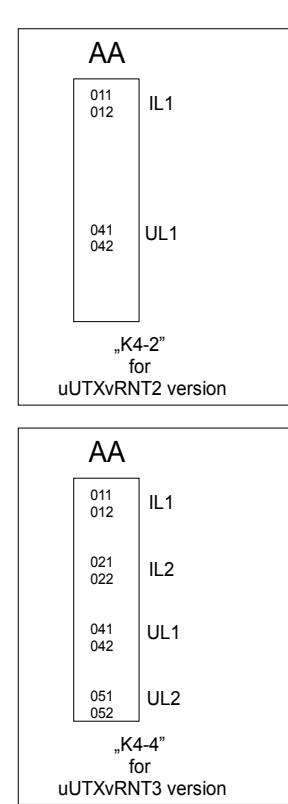
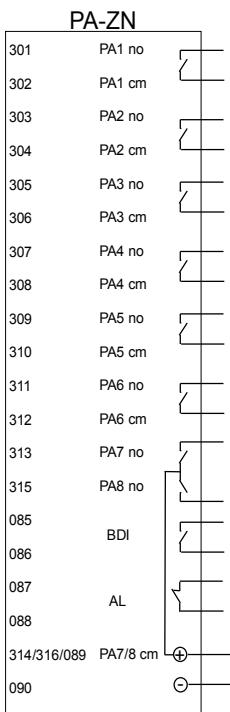
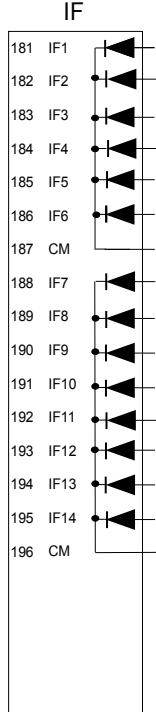
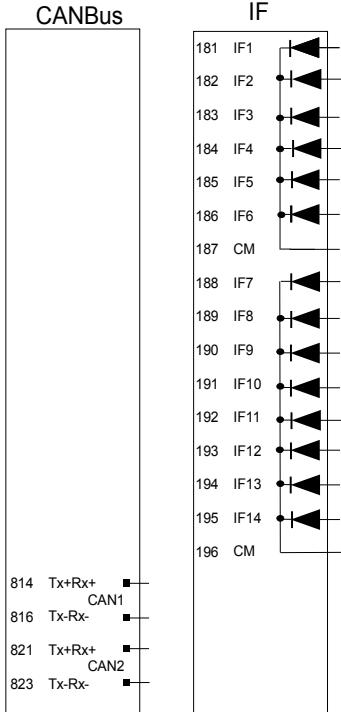
μ UTXvRNT



uUTXvRNT2 and uUTXvRNT3 description of connectors



OPTION I
CANBus



uUTXvRNT





Regulations:

No.	Test type	Standard	Tested elements	Test range
1	Electrostatic discharge immunity	PN-EN 50263:2002 PN-EN 60255-22-2:1999	Through the housing access	-6/8[kV] contact discharge -8/15[kV] discharge through the air
2	Resistance to electrical fast transients	PN-EN 50263:2002 PN-IEC 60255-22-4:1996 PN-EN 61000-4-4:2005	Power port I/O ports	class III – 2[kV] class IV – 4[kV]
3	Shock resistance	PN-EN 50263:2002 PN-EN 60255-22-5:2003 PN-EN 61000-4-5:2006	Power port I/O ports	class III : - common voltage – 2[kV] - differential voltage – 1[kV]
4	Immunity from electromagnetic fields	PN-EN 60255-22-3:2002	Device	- frequency: (900 ± 5) [MHz] - electromagnetic field level: 10[V/m]
5	Conducted immunity induced by radio frequency fields	PN-EN 60255-22-6:2004	Power port I/O ports	- frequency: $0,15 < f < 80$ [MHz] - amplitude : 10[V] r.m.s unmodulated - source impedance: 150[Ω]
6	Sinusoidal vibration	PN-EN 60068-2-6:2002	Device	- frequency: $(10-150)$ [Hz] - acceleration: $5[m/s^2]$ (rms)
7	Tolerance to cold	PN-EN 60068-2-1:2007(U)	Device	test temperature: $(-5)^\circ C$ 1. fall time to test temperature 1[h] test duration 1[h] 2. fall time to test temperature 0,4[h] test duration 16[h] 3. initial temperature $(-5)^\circ C$ test duration 1[h]
8	Tolerance to dry heat	PN-EN 60068-2-2:2002	Device	test temperature: $(+50)^\circ C$ rise time to test temperature 0,5[h] test duration 96[h]
9	Resistance to cold	PN-EN 60068-2-1:2007(U)	Device	temperature: $(-10)^\circ C$ test duration 96[h]
10	Resistance to dry heat	PN-EN 60068-2-2:2002	Device	temperature: $(+60)^\circ C$ test duration 96[h]

PRODUCTION, TRADE AND CONTRACT INFORMATION:

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