

# NTS-TC time-converter

## NTP/PTP IEEE1588 TO IRIG-B AM/DCLS



- INPUT PTP/IEEE1588 (S)NTP
- OUTPUT IRIG-B AM DCLS  
PPS / PPH / PPM



- LEAP SECOND support
- OSCILLATOR holdover\*
- LAN1/LAN2 100Mbps
- LAN3/LAN4 1GE (SFP, RJ45)
- PPS (Pulse Per Second)
- PPM (Pulse Per Minute)
- PPH (Pulse Per Hour)
- IRIG-B AM DCLS (TTL, RS422)
- IRIG-B DCLS Fiber Optic
- RS232/485/USB interfaces
- HTTP, HTTPS, TELNET, SSH
- MD5, RSA, DSA, SSL security
- SNMP v1,v2,v3 w/ MIB-2
- IEC 61850 compliant
- IEEE C37.238 compliant
- ITU G.8261 compliant
- ITU G.8271.2 compliant
- MiFID II compliant

 **ELPROMA**  
[www.elpromatime.com](http://www.elpromatime.com)

\* extra feature requiring additional hardware and/or software firmware upgrade

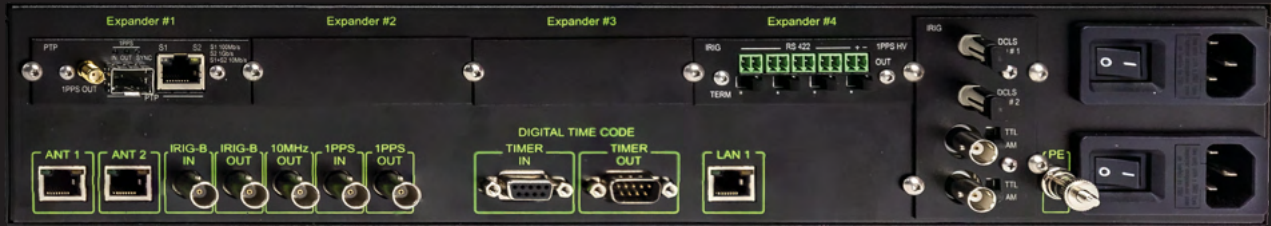


Basic



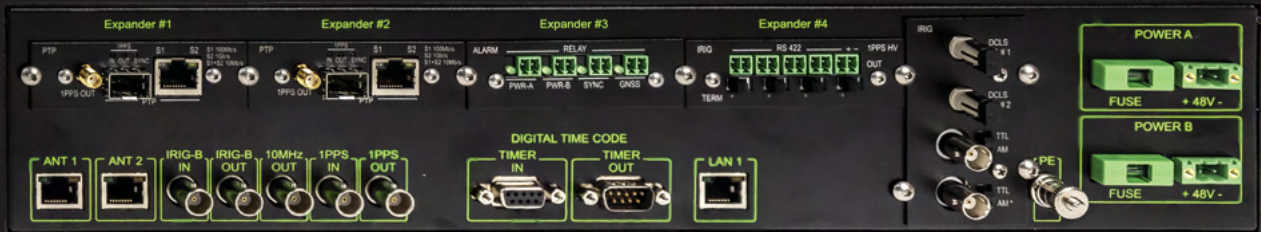
NTS-TC Smart Grid Custom: 1xIRIG-B AM (BNC), 4x IRIG-B DCLS (rs422), 2x IRIG-B DCLS (FO), 2x IRIG-B DCLS BNC TTL

Custom



NTS-TC Smart Grid Custom Max: All above plus extra: Expander #2 (redundant LAN5-6), Expander #6 ALARM relays

Custom Max



### Synchronization INPUTS

- Main (inputs)** : 4x LAN (LAN1-LAN2, Expander #1: LAN3-LAN4, optionally redundant Expander #2\*: LAN5\*-LAN6\*)  
 All LAN interfaces supports protocol client 100% compatible to:  
 NTP/SNTP v1,v2,v3,v4: RFC5905, RFC4330, RFC1305, RFC2030, RFC1119, RFC1769  
 PTPd IEEE1588:2008 (LAN1 -LAN2) w/ software stamping  
 PTP/IEEE1588:2008 (LAN3 -LAN4) w/ hardware stamping; profiles: default, power, telecom; P2P/E2E support  
 PTP/IEEE1588:2008 (LAN5 -LAN6)\* w/ hardware stamping; profiles: default, power, telecom; P2P/E2E support
- Alternative: (inputs)** 2x RS485 RJ45 ANT1/ANT2 supports NMEA 183 (requires NTS-antenna\* or external clock\*/GNSS-receiver\* RS485)  
 1x IRIG-B BNC TTL Analogue modulated IRIG (AM)  
 1x PPS BNC TTL  
 1x TIMER DSUB-9 supporting IBM SYSPLEX and other time-code (ToD) custom built standards

### Synchronization OUTPUTS IRIG-B AM & DCLS

- Mainboard (outputs)** 1x IRIG-B BNC TTL Analogue modulated IRIG (AM)  
 1x 10MHz BNC TTL (available w/ OCXO\* or Rubidium\* holdover\*)  
 1x 1PPS\PPM\PPH (software selectable BNC TTL)  
 2x RS485 RJ45 ANT1/ANT2 supporting NMEA 183  
 1x TIMER DSUB-9 supporting IBM SYSPLEX and other time-code (ToD) custom  
 LAN (LAN1-LAN2) 100Mbps NTP/PTP IEEE1588 w/ software time-stamping
- Expander#1 (outputs)** 2x ETHERNET 1GbE (SFP, RJ45), 1 PPS (SMA), E1/T1 (SMA/RJ45/BNC)\*
- Expander#2\* (outputs)** 2x LAN (LAN3-LAN4) GE (S)NTP/PTP IEEE1588 w/ hardware time-stamping
- Expander#2\* (outputs)** 2x ETHERNET 1GE (SFP, RJ45)\*, 1 PPS (SMA), E1/T1 (SMA/RJ45/BNC)\*
- Expander#2\* (outputs)** 2x LAN (LAN5-LAN6) GE (S)NTP/PTP IEEE1588 w/ hardware time-stamping
- Expander#3\* (outputs)** 4x ALARM  
 TB 2-pin RELAYS (Terminal Block)
- Expander#4\* (outputs)** 4x RS422 IRIG-B DCLS w/ MOSFET PPS/PPM/PPH  
 4x TB 2-pin RS422 (120 Ohm ON/OFF slide-switch)  
 1x TB 2-pin MOSFET PPS/PPM/PPH (coherent to BNC PPSout (software selection)
- Expander#5\* (outputs)** 2x Fiber Optic (FO) & TTL IRIG-B DCLS  
 2x ST Fiber Optic (FO) IRIG-B DCLS  
 2x BNC IRIG-B DCLS (w/ slide-switch selection to IRIG-B AM)

### Remote configuration

- SNMP v3, v2, v1 w/ MIB 2  
 RADIUS, HTTP/HTTPS  
 SSH, TELNET\*, NTP(NTPq/NTPdc)

### Front panel status

- IRIG, PTP/IEEE1588  
 NTP, LAN, PPS, GNSS OSC

### Mechanical/environmental

- Size: 484 x 300 x 88,8 mm  
 Power: 110-230 VAC (max. 1A)  
 125-300 VDC (max. 1A)  
 Operating temp: 0 °C to +60 °C  
 Storage temp: -40 °C to +80 °C  
 Humidity: up to 95%

### Manufactured

Made in EU ISO 9001  
 QUALITY  
 ASSURANCE

Manufactured in EU (Poland):  
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### Approved for:

- IEEE 61850-3  
 UL 60950-1  
 IEEE 1613  
 IEEE 1588:2008 (PTPv2)  
 CE/PCC/ISO9001

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