APC7
Smart AMR/AMI Data Concentrator

KEY FEATURES

- Provide reliable communication with meters and head ends
- Secure consumers' data and information
- Interfaces to smart electric, gas and water meters
- Flexible and configurable communication interfaces
- Pluggable communication interfaces
- WAN communications include GSM/GPRS, Ethernet and optical
- Supports wireless M-BUS, low power RF mesh
- RS-232 and RS-485 interfaces support IEC 62056-21 protocol
- High performance security via hardware crypto accelerator
- Long term real-time data archiving
- On board RTC with variety of time sync options
- Real time multi tasking operating system
- Alarm and event logging
- Variety of communication protocols
- Local and remote configuration, programming and diagnostics
- Easy configuration and simple monitoring via web browsers
- USB connectivity allows easy setup and programming

APC7 data concentrator is used with automatic meter reading (AMR) and advanced metering infrastructure (AMI) architectures. It collects informaton and data, often from multiple meters. It communicates that data to a central database for billing, troubleshooting and analyzing. It would not be practical, technically as well as economically, for all meters to directly communicate with utility servers.

Variety of Communication Standards and Protocols

On one side, smart meters could be configured with a neighbor-area network (NAN) communications, featuring narrow bandwidth and lower power consumption, based on regional or country-wide policy, such as RS-485, narrow band power line communication (PLC), broad band PLC, low power RF, etc. On the other side, utilites may have an existing wide area network (WAN) communication, featuring higher bandwidth and higher data speed, to collect data such as GSM/GPRS, Ethernet, optical cable. APC7 has enough communication processing capabilty and flexible interfaces to deal with those protocols and infrastructures.

Pluggable Communication Interfaces

With its pluggable communications interface, APC7 supports variety of wired and wireless WAN or NAN infrastructure to meet current and future requirements.

Real-Time Data Archiving

APC7 features powerful real-time data gathering and long term archiving which avoids any data loss when WAN communication channels are not available or utility servers are in mantenance.

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BASIC SPECIFICATIONS

POWER

DC input	8-28VDC / 0.7A max.

GENERAL

Operating ambient temperature	-30°C..+70°C standard
Relative humidity	%95 non-condensing
Dimensions	99H x 22.5W x 114.5D mm
Weight	0.15 kg / 0.33 lbs.
Protection	IP54
Indicators	9 LEDs

CERTIFICATES AND APPROVALS

CE	IEC 61000-4-2 (ESD), IEC 61000-4-3 (EM), IEC 61000-4-4 (EFT), IEC 61000-4-5 (Surge), IEC 61000-4-6 (Conducted)

ON-BOARD COMMUNICATION INTERFACES

RS-232	2 protected
	IEC 62056-21 Mode C. Automatic meter recognition
	150..38400 bps, 8..9 bit, 1..2 stop bit, (parity: no|odd|even)
Isolated RS-485	1 protected, 2500Vrms isolation per UL 1577
	Supports IEC 62056-21 Mode C. Up to 16 meters
	150..38400 bps, 8..9 bit, 1..2 stop bit, (parity: no|odd|even)
RS-485	1 with industrial protection
	Supports IEC 62056-21 Mode C. Up to 16 meters
	150..38400 bps, 8..9 bit, 1..2 stop bit, (parity: no|odd|even)
Ethernet	IEEE 802.3u, 10/100 Mb/s, AN, 1500Vrms / isolation
USB	USB 2.0 host HS, 0.5A

PLUGGABLE COMMUNICATION INTERFACES

GPRS	4 band GSM/GPRS/EDGE, TCP/IP cilent or server, Internet, e-mail, SMS
Antenna	0 dB, SMA, 824~896/880~960/1710~1880/1850~1990MHz
SIM card	I1.8V/3V accessible via the front panel
WM-BUS 868	EN13757-4 / EN13757-5 compliant
	868-870 MHz, 25mW max, 12 ch (1 link A, 1 link B, 10 link C), GFSK, AES NTA8130/DSMR
	4.8, 32.768, 100 kcps, -108 dBm (CER < 10) sensitivity
Antenna	0 dB, SMA, 868MHz
WM-BUS 169	EN13757-4 compliant
	169.400 - 169.475 MHz, 35mW max, 7 ch (6x 12.5kHz, 1x 50kHz), GFSK/GMSK/4GFSK, AES/NRZ
	2.4, 4.8, 19.2 Kbps, -120 dBm (BER < 10 @ 2.4 Kbps) sensitivity
Antenna	0 dB, SMA, 169MHz
Low power mesh	Up to 10 hops and 10000 devices on network
	433.050 - 434.790 MHz / 863 - 870 MHz, 25mW max, 8 ch (433MHz), 13 ch (868MHz), GFSK
	38.4 Kbps, -101 dBm (PER = 1% @ 38.4 Kbps) sensitivity
Antenna	0 dB, SMA, 433MHz / 868MHz