DATA ACQUISITION
SYSTEMS (DAS)

NOR-CAL CONTROLS
ENERGY SOLUTIONS
Your Project. Our Passion.

REAL-TIME DATA ACQUISITION

Continuously monitor performance data and alarms for all PV system devices, including all on site inverters (central or string), MV transformers, revenue meters, meteorological (MET) station sensors and/ or Intelligent Equipment Devices (IEDs).

OPEN ARCHITECTURE

Every DAS solution is open architecture and can be compatible with most if not all accessible, off-the-shelf hardware and software components, allowing complete freedom to perform upgrades and maintainance throughout your systems life as you wish.

CONTROL READY

Adding control functionality may be necessary in the future as a grid stability requirement. Each DAS system comes "control-ready", robust, and scalable for control. Adding manual and/or automated control for any and all site devices can be done at any time at a minimal cost.

FULLY CUSTOMIZABLE

Each solution is tailored to meet project and application requirements using industry best practices.

SEAMLESS 3RD PARTY INTEGRATION

Integrate with third-party off takers, including Utility entities and O&M providers, utilizing our built-in OPC and Modbus device communication protocols.

AUTOMATIC ALARM NOTIFICATION

Automatic through SMS and email for all DAS monitored devices. Alarm recipients and escalation schemes can be configured based on alarm priority.

CLOUD-BASED DATA MONITORING & ENTERPRISE DASHBOARDS

Nor-Cal offers Canary Labs Axiom software, a cloud-based data monitoring solution. Users can securely log into customized dashboards to view real-time and historical data for all PV sites under the operating portfolio.

With the Enterprise Fleet Dashboard, you can view high level information or drill into KPIs, performance trends, alarm information and run historical reports.

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> Nor-Cal's DAS systems are designed to **continuously monitor performance data and alarms** for all PV and storage system devices, including all on-site inverters (string or central), BMS, MV transformers, revenue meters, meteorological (MET) station sensors and/or intelligent equipment devices (IEDs).
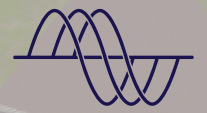
www.norcalcontrols.net

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El Dorado Hills, CA 95762

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DATA ACQUISITION
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DATA ACQUISITION ENCLOSURE COMPONENTS

DATA LOGGER	Advantech IPC UNO-2473G
METER (OPTIONAL)	AcuPanel 9104X
IO (OPTIONAL)	MOXA Ethernet IO (Digital and Analog)
CELL MODEM	Sierra Wireless RV50
NETWORK SWITCH	N-Tron 308FX2
POWER SUPPLY	Phoenix Contact TRIO-UPS
EXTERNAL BATTERY	12 Hours
DATA STORAGE	1 Second

INVERTER SKID CLOSURE COMPONENTS (CUSTOMIZABLE)

IO (OPTIONAL)	MOXA Ethernet IO (Digital and Analog)
MEDIA CONVERTER	(Optional) MOXA Mgate
CELL MODEM	Sierra Wireless RV50
POWER SUPPLY	Phoenix Contact TRIO-UPS
EXTERNAL BATTERY BACKUP	2 Hours

COMMUNICATION

LAN	RJ45 10/100 Ethernet, full half duplex, auto polarity
CELLULAR (OPTIONAL)	4G LTE and 3G compatible
NETWORKING	Static IP
PROTOCOLS	Modbus TCP, Modbus RTU (RS-232/485), OPC-UA, DNP 3.0 ethernet or serial

COMPLIANCE

ANSI C12.20 CLASS 0.5 (POWER METER)

CAN/CSA-C22.2 NO. 14 LISTED INDUSTRIAL CONTROL PANEL

UL LISTED 508A LISTED INDUSTRIAL CONTROL PANEL

PHYSICAL

ENCLOSURE RATING	NEMA 4
WEIGHT	30+ lbs
DIMENSIONS	24" L x 24" W x 10" H
ENVIRONMENT	-30˚C to 60˚C, 95% RH, non-condensing

POWER METER

VOLTAGE	Up to 600VAC
PHASES	Single phase, split phase, three phase at 50 or 60 Hz
CURRENT INPUTS	5A, 1A, 333mV, 200mA, 100mA, or 80mA

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