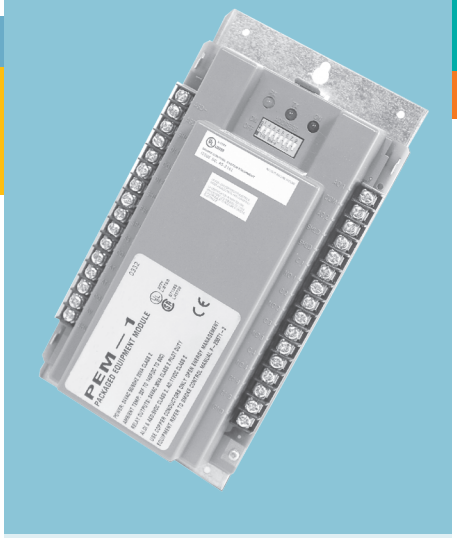

PACKAGED EQUIPMENT MODULE

- Stand-alone operation of packaged equipment.
- Fully integrated with other TAC NETWORK 8000 ASD devices.
- Accessible via the Personal System Interface (PSI™).
- Advanced surface-mount technology assures high reliability and unsurpassed performance.
- Easy two-point mounting.
- At-a-glance LED indication of proper performance.

The fully programmable TAC Packaged Equipment Module (PEM™) is a direct digital controller designed to provide high-level performance for typical packaged or unitary control applications. The TAC Packaged Equipment Module, through its advanced surface-mount technology, combines high reliability with unsurpassed equipment controllability in areas where electric, pneumatic, or electronic systems were the past control solution of choice.

The TAC Packaged Equipment Module is designed to bring stand-alone DDC control to such equipment as unit ventilators, fan coils, water-source heat pumps, and a variety of other packaged equipment applications. Each TAC Packaged Equipment Module is fully compatible with the TAC NETWORK 8000 family of integrated facility management controls. A complete and highly advanced library of control applications is provided via an advanced block programming technology. Each application within the library can be simply downloaded to the TAC Packaged Equipment Module through standard hand-held or desktop interfaces.

The TAC Packaged Equipment Module's EEPROM memory technology assures error-free performance without the fear of program loss due to power outages or battery backup failure. You can rest assured that your packaged equipment, under the control of the TAC Packaged Equipment Module, will provide countless hours of superior performance and, when integrated, all of the advantages of the TAC NETWORK 8000 Facility Management System.

Applications for which the PEM is designed for include unit ventilators (Cycle II and Cycle III), fan coil units (two-pipe, three-pipe, and four-pipe), water-source heat pumps (one-stage), and satellite input/output control.

Table-1 Model Chart.

Model	Description
PEM-1	Panel (must be mounted within a NEMA 1 compartment at the controlled equipment)

SPECIFICATIONS

PEM-1

HARDWARE SPECIFICATIONS

Dimensions
8.5 H x 4.43 W in. (216 x 112 mm).

Enclosure
See Table-1.

Power Supply Input
20 to 30 Vac, 50/60 Hz (Class 2).

Maximum Power Consumption
20 VA at 50/60 Hz.

Transient Compliance Tests
IEEE-587 (ANSI C62-41), Categories A and B; UL-864.

Electrostatic Discharge Test
±15 kV to case, ±5 kV to field wiring terminals.

Microprocessor
80C198 microcontroller, 7 MHz clock speed, 16 bit word size.

Memory
EPROM: 64 KB for program memory

Static RAM: 8 KB.

EEPROM: 512 bytes for application program storage.

AGENCY APPROVALS

UL-916
File #E71385 Category PAZX.

CSA
File #LR 3728.

FCC
Class B.

UL-864
File #S5381 Category UUKL.

AMBIENT LIMITS

Operating Temperature
2 to 140 °F (0 to 60 °C).

Shipping and Storage Temperature
-40 to 160 °F (-40 to 71 °C).

Humidity
10 to 95% RH, non-condensing.

RESPONSE TIME

0.5 seconds maximum.

INPUTS

AS 1 (1) Setpoint Adjustment
55 to 85 °F (10 to 30 °C).

From TS-90250-85X series sensor. Dry contact (DI) may be tied across input.

AT 1, AT 2 (2) Thermistor
20 to 140 °F (-6.6 to 60 °C) range. TS-5700-850 or equivalent or as a dry contact. Dry contact may be tied across input.

AV 1 (1) Analog Voltage
0.0 to 5.0 Vdc, 4 to 20 mA range (250 ohm resistor required).

DI 1, DI 2 (2) Digital Input
Dry contact (once per second, 0.5 second minimum ON or OFF time per pulse).

OUTPUTS

(2) Analog
0 to 20 mA into an 80 to 550 ohm load (momentary short circuit protection).

(4) Digital
Form A (SPST) isolated, common with normally open. Ratings 24 Vac, 30 VA, Class 2, pilot duty.

Communications

Port
RS-485 asynchronous at 9,600 baud for connection to the Universal Network Controller (UNC) and/or the PSI through the ASD communications bus.

Personal System Interface
The hand-held device operating the Personal System Interface can monitor all input/output points as well as all device control parameters. This allows simple input/output point overriding and graphical trending as well as upload and download capabilities for program archiving. Connection to the TAC Packaged Equipment Module does not interrupt communications. When connected within the network to any ASD bus, any TAC Packaged Equipment Module can be accessed immediately.

TAC NETWORK 8000 Access
Up to 128 PEMs, or any combination of ASD products, per UNC. All input/output and control parameters may be utilized or shared throughout the network.

Accessories

AD-8969-202	250 ohm shunt resistor kit for 4 to 20 mA analog input conditioning
AD-8969-206	11 k ohm shunt resistor kit for 10 k thermistor sensor (non-850 series)
AD-8961-220	Voltage divider (converts 1 to 11 Vdc signal to 0.5 to 5 Vdc signal)
AE-690	Mounting enclosure, 10-7/8 x 8-1/2 x 4-1/4 in. (276 x 216 x 108 mm)
EMSC-515	Pre-terminated wiring harness kit

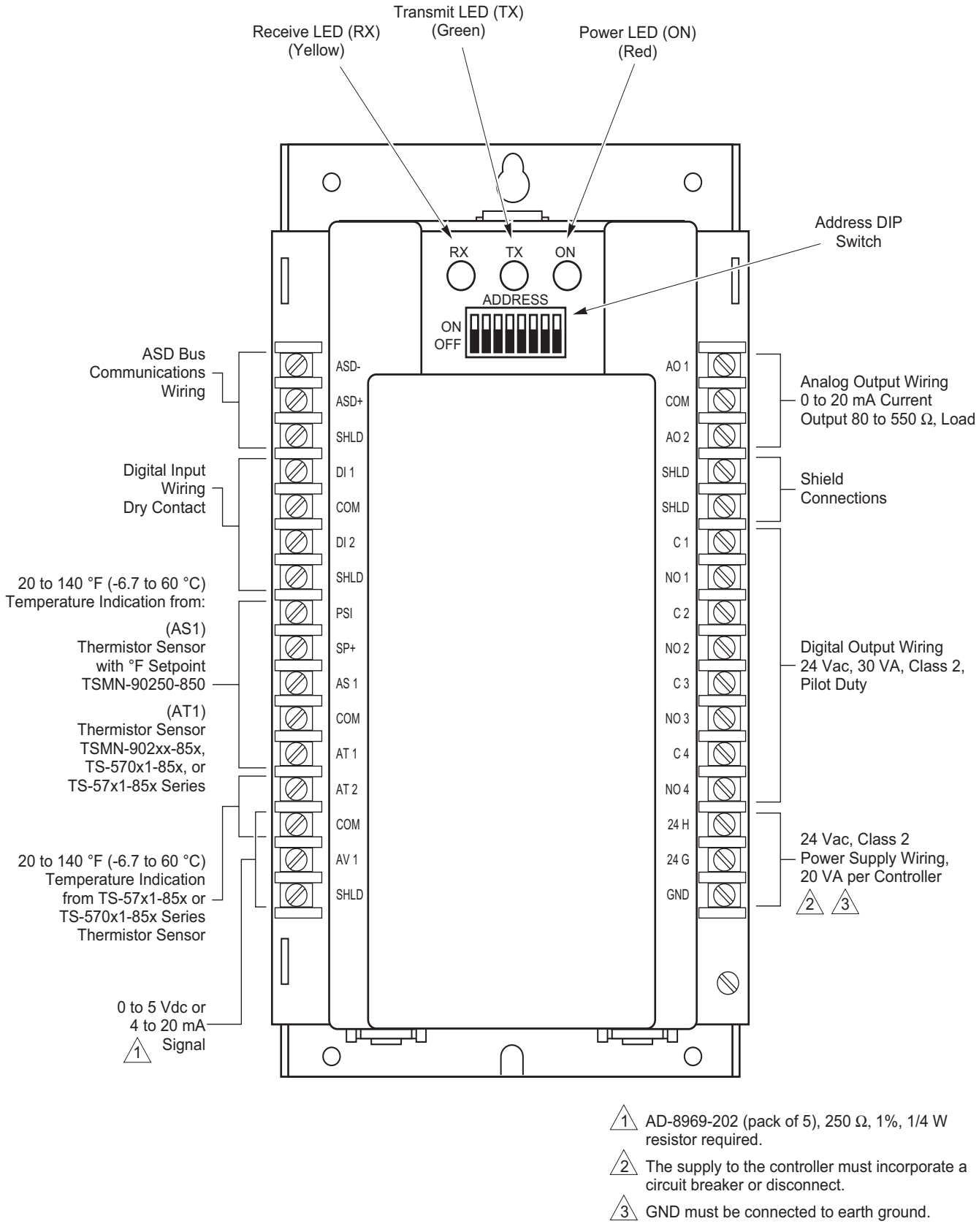

Figure 1 Terminal Connections and Performance Indicators.

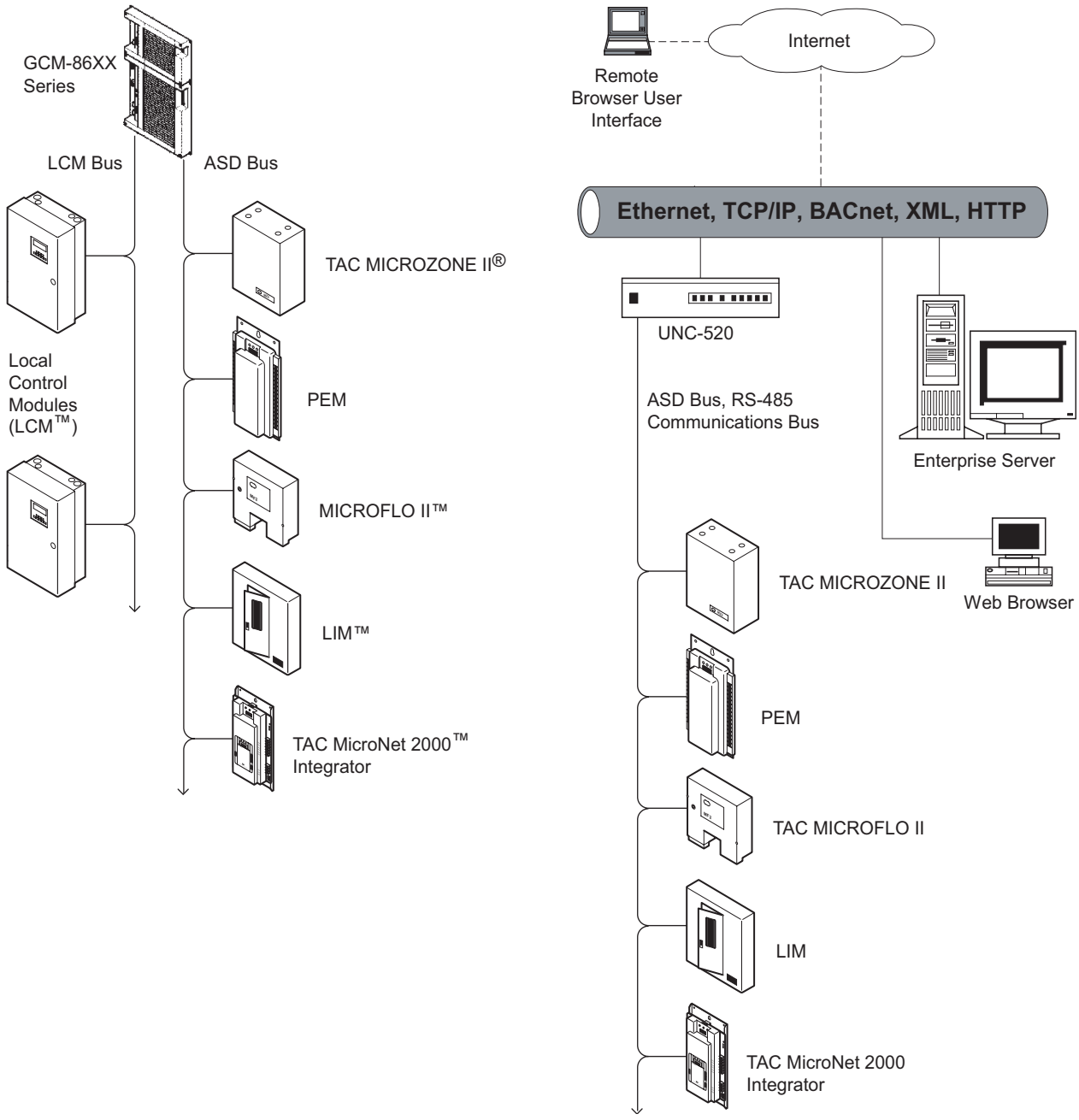

Figure 2 Packaged Equipment Module with Other ASD Devices in the TAC NETWORK 8000 System.

F-25024-2

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