Appendix 1

INTRODUCTION

The following examples show the possible output readings from the various CPAMS units. When the applicable readings appear in the 289 Diagnostics Realtime Reading Test, they are accompanied by an additional ***Status*** indicator column. This status indicator value can be used to further define the problem. (For more information on ***Status*** indicators, see Section 8 of the Operations manual, “CPAMS Diagnostics.”)

Readings	**Monitor/Causes**
" "	SSI monitors—Blank ▪ Non-addressable—No reading obtained from monitor ▪ Addressable—The device has not been scanned by the AMC card since the last 289H reset. The 289H LSS is prevented from tuning or reading an addressable pair by a type conflict between the first installed device on the pair and the data for that device/access number. This will result in blank readings for all devices on the pair. Or for Chatlos addressable transducers: since these devices are polarity sensitive, blank readings are most commonly caused by tip and ring reversals. If all the Chatlos addressables are posting blank readings, try reversing the tip and ring to correct the problem. Blank readings can also result when one or more devices on a pair are connected incorrectly (i.e., not sharing the same polarity).
0.0	Zero reading
ADDR	289H (addressable)—Improper wiring; defective module. Or address problem: a device at address 0 was detected; the address of a responding device did not match the requested address; or a device was installed at an address with an invalid type (data entry). Further details may be obtained via Realtime Readings for the device from the 289 Diagnostics utility.
ALRM	Device in alarm
BCLS	SSI monitors—Binary contactor is closed
BOPN	SSI monitors—Binary contactor is open
BUSY	Subscriber pair busy; can't obtain reading

CLSD	Device closed
EDIT	Bad access number for this device; check device information in PressureMAP Data Entry. Check that access number matches card configuration for monitor. Possible data entry conflict; check that device type and corresponding information is supported.
ERR	Non-addressable—Failed to get valid reading Addressable—Reading could not be calculated due to an error encountered in processing the 289H data. Causes include: unknown TD Type, 289H protocol error, function table interpretation error, unit conversion error, etc.
LOW	Sparton—Pressure or flow rate has fallen below the assigned threshold limit
MOM	Chatlos—Last operation was momentary latch
N/A	Chatlos—Reading not taken, rapidly fluctuating readings received due to bad transducer 289H (addressable)—Improper wiring; defective module. Or address problem: a device at address 0 was detected; the address of a responding device did not match the requested address; or a device was installed at an address with an invalid type (data entry). Or the pair could not be tuned since the device at the first address has an invalid type (invalid data). Further details may be obtained via Realtime Readings for the device from the 289 Diagnostics utility.
NANS	Sparton—No answer from addressable TD (N—ANS)
NCOM	Nicotra—No communication with long distance pressure transducer
NEW	Sparton—Measurement point added to satellite unit, unread (NEWERR)
NG	Chatlos—Alarm condition for contact types D, G, L, M, P
NMAP	E2A or 289H—No access translation mapping for the device in the assigned Access Number Map
NMOD	Sparton—Measurement module selected not in system or inoperative (NOMOD)

NONE	289H (addressable)— No addressable device responded to an AMC poll of the corresponding address on the pair.
	Lancier—No response from device, similar to NRSP
NRSP	Sparton—Measurement module has not responded to the interrogation command, possible malfunction (N-RSP)
NSE	ALL—Error, noise, or fluctuation on the pair; no valid reading
	289H (addressable)—Communication error (i.e., noise) on the pair while the AMC was polling the addressable device. Further details may be obtained via Realtime Readings for the device from the 289H Diagnostics utility.
NUSE	Sparton—Module in use or inoperative (INUSE)
NV	E2A—Non-valid data response from device
OK	ALL—Measurement point within assigned threshold limits
	Chatlos—Normal state for contact types D, G, L, M, P
OPEN	SSI monitors— ▪ Non-addressable—Pair reads open; resistance greater than 6.0 megohms. Reading less than 1.0 mA. (Prior to Version 21, this message was generated by readings less than .006 mA.) ▪ Addressable—Pair is open, or there is nothing connected to the corresponding channel of the addressable transceiver. Further details may be obtained via Realtime Readings for the device from the 289H Diagnostics utility.
	Chatlos—640ST-L2, DT-L2 not firmly seated. Cable connectors not making proper contact. Frame assignments not made properly. 640R-30 diode assemblies not installed on working pairs or installed in wrong position on terminal block. Working pairs terminated in reverse or denied service by removal of head coil. 640ST-LS has an open circuit.
	Sparton—Measured resistance greater than 6.5 megohms for pressure and flow TDs or measured resistance greater than 8200 for toll/trunk cables equipped with a contactor.
	TMACS—For type T contactors the high threshold has been exceeded, for other contactors/pressure/airflow/cathodic transducers the reading is > 5000K ohms.

OPNI	SSI monitors—Pair reads open; possibly inside the CO
OPNO	SSI monitors—Pair reads open; possibly outside the CO
OVER	Sparton—Volume counter limit has been exceeded, binary module count overflow
PAIR	SSI monitors— ■ Non-addressable—Pair trouble or if Trunk/Toll, the device that represents the normal resistance for the pair ■ Addressable—Loading on this pair is greater than the expected maximum. Further details may be obtained via Realtime Readings for the device from the 289 Diagnostics utility.
PROG	289H (addressable)—The addressable card was unable to tune or read the pair due to invalid programming of the devices found on that pair. Check the device information in PressureMAP to confirm that there are no data entry errors. If the data entry is correct, the Erase AMC Flash function in 289 Diagnostics utility can be performed to erase the card's Device Table. If PressureMAP continues to post the PROG reading, call Tech Support for further troubleshooting and assistance.
PWR	Nicotra—Indicates power not applied to line/pair
R/E	Chatlos L2/L3—Range Error. This addressable error indicates a range error outside the range of 0-9.5 PSIG.
REL	Chatlos—Last operation was release
RNG	Nicotra—Frequency reading out of acceptable range
SHRT	Sparton—Resistance less than 95K ohms for pressure or flow TDs SSI monitors— ■ Non-addressable—Readings above 33 mA. (Prior to Version 21, this message was generated by readings above 30 mA.) Or resistance less than 95K ohms. For resistive devices on subscriber pairs, check that the TD Type in PressureMAP data is correct for the device's ground connection. ■ Addressable—Short on the pair, or possibly between the addressable transceiver and the TD. This message may be caused by an excessively loaded pair. Further detail may be obtained via Realtime Readings for the device from the 289H Diagnostics utility.

	TMACS—Type T contactors has reading below the Low threshold, other contactors have readings < 98Kohms. Airflow/pressure/cathodic transducers have readings of < 80Kohms.
	Chatlos—Scanned pair had zero ohms across it as of the last scan, -48VDC on the TIP side or the TD pair is shorted (90,000 ohms or less).
TD	E2A—Tone detect circuit out of calibration when accessing E2A static device
TRHI	Sparton—Current reading of a pressure or flow transducer is greater than the assigned +TREND threshold (TR+)
TRLO	Sparton—Current reading of a pressure or flow transducer is less than the assigned -TREND threshold (TR-)
UBAL	SSI monitors—Unbalanced pair, one or both sides of the pair have too much leakage to ground; run Realtime Leakage Diagnostics Test to determine which side of the pair has the problem. For resistive devices on subscriber pairs, check that TD Type in PressureMAP data is correct for the device's ground connection.
UP	Sparton—One or more toll/trunk contactors have activated and the cable resistance has increased by an amount greater than the TREND value.
VOLT	SSI monitors—Reading in excess AC or DC voltage on the pair; run AC and DC Diagnostics Tests to determine if the voltage is AC or DC
WRNG	Lancier—reading received as WRONG, incorrect reply from device