39VIMCCN 16171-126/6

Siemens APACS+ Voltage Input Module

Product scope

- Interfaces thermocouple and voltage input signals to a control module IOBUS.
- Provides 16 individually isolated channels configurable for thermocouple or voltage input.
- Supports configurable ranges, engineering-unit scaling and low-pass digital filtering.
- The /6 assembly identifier must be matched exactly to the installed nameplate before replacement.

Manufacturer source

Siemens APACS+ and QUADLOG Product Line Cancellation Announcement, Appendix A

The enclosed Siemens pages identify 39VIMCCN as an APACS+ voltage input module and reproduce the related module-family configuration pages where available. The complete order and nameplate identifier is retained on this Apter cover for procurement matching.

Request a fast quote	Product reference	
Email: info@apterpower.com Phone: +86 18106909650 apter.com/inquiry.php	39VIMCCN 16171-126/6	

The enclosed manufacturer pages are reproduced without alteration to technical content. External interactive links and unrelated pages are excluded from this web-optimized copy.

September 1, 2011

Reference: APACS+ and QUADLOG Product Line Cancellation Announcement
Appendix A:

UPH:16804-48	IFI QUADLOG Star Kit	Yes	
UPH:16807-33	POWER SUPPLY FILTER	Yes	
UPH:16809-10	SRSA WIRE TYPE KIT FOR 48VDC,	Yes	
UPH:16809-12	SRSA PLUG TYPE KIT FOR 48VDC,	Yes	
UPH:16809-6A	SRSA WIRE TYPE KIT-FOR 24VDC	Yes	
UPH:16809-8A	SRSA PLUG TYPE KIT-FOR 24VDC	Yes	
UPH:39ACM24BEN	CONTROLLER ADVANCED MODULE-4MB - APACS+	No	October 1, 2011
UPH:39ACM28AEN	CONTROLLER ADVANCED MODULE-8MB - APACS+	No	October 1, 2011
UPH:39ACM34AAN	CONTROLLER ACCEL ADVANCED 4MEG - APACS+	No	October 1, 2011
UPH:39ACM38AAN	CONTROLLER ACCEL ADVANCED 8MEG - APACS+	No	October 1, 2011
UPH:39BCMNBN	MODULE BUS CONTINUATION - APACS+	Yes	
UPH:39BDMNBN	MODULE BUS DIVERTER - APACS+	Yes	
UPH:39EAMCBN	MODULE ENHANCED ANALOG - APACS+	Yes	
UPH:39HFM2CBN	MODULE HART FIELDBUS - APACS+	Yes	
UPH:39IDM115ACCBN	MODULE STANDARD DISCRETE INPUT - APACS+	Yes	
UPH:39ODM115ACCBN	MODULE STANDARD DISCRETE OUTPUT - APACS+	Yes	
UPH:39PFMAAN	MODULE PROFIBIS INTERFACE	Yes	
UPH:39PSR2ANCN	POWER RACK 200 WATT 115/230VAC	No	October 1, 2011
UPH:39PSR4ANDN	POWER RACK 400 WATT 115/230VAC	No	October 1, 2011
UPH:39PSR4ANEN	POWER RACK 400 WATT 115/230VAC	Yes	
UPH:39RTMCAN	MODULE RESISTANCE TEMPERATURE - APACS+	Yes	
UPH:39SAIAAN	MODULE STANDARD ANALOG INPUT - APACS+	Yes	
UPH:39SAMCAN	MODULE STANDARD ANALOG - APACS+	Yes	
UPH:39SCMNNNAAN	SATELLITE CONTROLLER MODULE	No	October 1, 2011
UPH:39SDM024DCCBN	MODULE STANDARD DISCRETE -24V - APACS+	Yes	
UPH:39SDM048DCCBN	MODULE STANDARD DISCRETE -48V - APACS+	Yes	
UPH:39VIMCCN	MODULE VOLTAGE INPUT - APACS+	Yes	
UPH:QLBCMNBN	MODULE BUS CONTINUATION - QUADLOG	Yes	
UPH:QLBDMNBN	MODULE BUS DIVERTER - QUADLOG	Yes	
UPH:QLCAMAAN	MODULE CRITICAL ANALOG I/O - QUADLOG	Yes	
UPH:QLCAIAAN	MODULE CRITICAL ANALOG INPUT MODULE - QUADLOG	Yes	
UPH:QLCCM22AAN	MODULE CRITICAL CONTROL MODULE - QUADLOG	No	October 1, 2011
UPH:QLCCM24AAN	MODULE CRITICAL CONTROL MODULE - QUADLOG	No	October 1, 2011
UPH:QLCCM32AAN	MODULE CRITICAL CONTROL MODULE - QUADLOG	No	October 1, 2011
UPH:QLCCM36AAN	MODULE CRITICAL CONTROL MODULE - QUADLOG	No	October 1, 2011
UPH:QLCDM024DCBAN	MODULE CRITICAL DISCRETE IN 24V QUADLOG	Yes	
UPH:QLCDM048DCBAN	MODULE CRITICAL DISCRETE IN 48V QUADLOG	Yes	
UPH:QLCDODCAAN	MODULE CRITICAL DISCRETE OUT MODULE 24VDC to 125 VDC	Yes	
UPH:QLEAMBBN	MODULE ENHANCED ANALOG I/O - QUADLOG	Yes	
UPH:QLIDM115ACBBN	MODULE STANDARD DISCRETE INPUT (115VAC)	Yes	
UPH:QLODM115ACBBN	MODULE OUTPUT DISCRETE (32 CH, 115VAC)	Yes	
UPH:QLRTMBAN	MODULE RESISTANCE TEMPERATURE - QUADLOG	Yes	
UPH:QLSAMBAN	MODULE STANDARD ANALOG I/O - QUADLOG	Yes	

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7.11 QUADLOG Voltage Input Module (VIM)

The Voltage Input Module (VIM) interfaces thermocouple and voltage input signals to a control module's IOBUS. It provides 16 channels, each of which can be configured to be a thermocouple or voltage input. The VIM can accommodate many input types with minimal configuration and high accuracy. Each input is electrically isolated from the module's CPU, IOBUS, and ground to isolate field faults. In addition, each channel is isolated from other channels.

QUADLOG VIM Module Scope Parameters

The table below lists the Module Scope softlist parameters for the VIM. To view/edit the module scope parameters, place the cursor on the desired module in the module tree and select the Edit, Object/Item menu item. The Hardware Modules dialog box opens. Choose the Softlist command button to open the Module Scope Softlist dialog box.

PARAMETER	SELECTION	DEFAULT
ScanRate	Not Applicable (hidden in HW Config)	Not Applicable
LineFreq	50 Hz, 60 Hz	60 Hz
SharedTC	Yes, No	Yes

ScanRate (hidden in HW Config)**:** This is a read-only parameter that displays the current scan rate of the module. Generally, the scan rate will be the same as the scan rate of the control module, but can be a multiple of the control module's scan rate.

LineFreq: The module software utilizes a notch filter to reduce noise from AC power sources. Specifying the line frequency of AC power will optimize the filtering algorithm.

SharedTC: This parameter only applies when using VIMs in a redundant system. Often, one thermocouple is wired to both the calculate (primary) and standby (backup) VIMs. If this is the wiring arrangement for the VIMs being configured, set SharedTC to Yes. If each VIM has its own thermocouples, set SharedTC to No. For non-redundant VIMs, set SharedTC to No (default).

QUADLOG VIM Channel Types

The channel types supported for the VIM are listed here. In a DP/IO Bus Link environment, configuration information in this document supersedes information in the section titled "Configuring I/O Channels" in the document *Using the ProcessSuite 4-mation Configuration Software Version 4.30 or Higher* (CG39-20)..

- VIM TIC - Thermocouple Input (TIC)
- VIM VIC - Voltage Input Thermocouple Input (VIC)

7.11.1 QUADLOG VIM Thermocouple Input (TIC)

The Thermocouple Input channel type returns a REAL variable. The table below shows the softlist parameters for this channel type.

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Note
Selecting a thermocouple type does not automatically adjust the default **MinRange** and **MaxRange** to values appropriate for that type. If your thermocouple is other than Type J, ensure that **MinRange** and **MaxRange** settings are set properly. See the description of **TCType** below for a list of supported thermocouple types.

PARAMETER	SELECTION	DEFAULT
TCType	B, E, J, K, N1, R, S, T, N2	J
EngUnits	DegF, DegC, DegK, DegR	DegC
StepResponseTime	0.100 to 2.000 Seconds	1.0
Bias	Any REAL number	0.0
MinRange	Any REAL number	Min. range of TC type selected. (on-line) -1000.0 (off-line)
MaxRange	Any REAL number	Max. range of TC type selected. (on-line) +5000.0 (off-line)
Scale_To_Percent	Boolean	FALSE
Burnout	Disable, Up, Down	Disable
DigFiltTimeCnst	0.0 to 159.0 sec.	0.016

TCType: The types of thermocouple must be specified from the list of selections. Temperatures are given in Degrees C.

J_MIN_TEMP -210.0f
J_MAX_TEMP 1200.0f

K_MIN_TEMP -270.0f
K_MAX_TEMP 1372.0f

T_MIN_TEMP -270.0f
T_MAX_TEMP 400.0f

B_MIN_TEMP 42.0f
B_MAX_TEMP 1820.0f

S_MIN_TEMP -50.0f
S_MAX_TEMP 1767.0f

N1_MIN_TEMP 0.0f
N1_MAX_TEMP 1300.0f

N2_MIN_TEMP -270.0f
N2_MAX_TEMP 400.0f

E_MIN_TEMP -270.0f

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E_MAX_TEMP 1000.0f

R_MIN_TEMP -50.0f
R_MAX_TEMP 1767.0f

EngUnits: You can select from the following engineering units: DegF, DegC, DegK, DegR.

StepResponseTime: This parameter determines the time for the channel to fully respond to a step input. A longer StepResponseTime will provide higher resolution and better repeatability of the signal.

Bias: A bias value can be entered to adjust for any known offset (usually due to thermocouple aging). The bias value can be any REAL number and will be added to the scaled thermocouple reading.

MinRange: MinRange is an optional parameter that allows you to specify a minimum operating value in EngUnits. If the reading drops below this value, an underrange error is reported. The MinRange can be any REAL number.

MaxRange: MaxRange is an optional parameter that allows you to specify a maximum operating value in EngUnits. If the reading goes above this value, an overrange error is reported. The MaxRange can be any REAL number.

Scale_To_Percent: This is a Boolean softlist parameter whose default value is FALSE.

Burnout: You can specify burnout detection or open circuit detection for a thermocouple:

Disable = No burnout or open circuit detection
Up = Return max operating value for TCType selected
Down = Return min operating value for TCType selected

DigFiltTimeCnst: Digital filtering can be applied to thermocouple input signals to reduce the effects of electrical noise. The digital filter is a first order lag, adjustable for time constants of 0.0159 to 159.0 seconds. Equivalent breakpoint frequencies are 10.0 to 0.001 Hz. The default value can be increased for noisy signals.

7.11.2 QUADLOG Voltage Input (VIC)

The Voltage Input channel type returns a REAL variable. The table below shows the softlist parameters for this channel type.

EngUnits (engineering units) is an optional parameter (no engineering units is an acceptable choice)

PARAMETER	SELECTION	DEFAULT
InputRange	VDC1to5, VDC0to5, VDCNeg10to10, VDCNeg5to5, VDCNeg1to1, Custom	VDC1to5
Custom_Range_Low	-10 to 10	0
Custom_Range_High	-10 to 10	0
MinScale	Any REAL number	0.0
MaxScale	Any REAL number	100.0

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PARAMETER	SELECTION	DEFAULT
EngUnits	ACFH, ACFM, AMPS, ATM, bar, BARG, bbl, bhp, BPD, bph, Btu, Btu/hr, Btu/lbm, Btu/SCF, cal, cal/hr, cal/lbm, cal/SCF, cm, cps, days, deg, degC, degF, degK, degR, ft, ft/sec, ft/sec2, ft3, ft3/lb, g, g/cm3, gal, gal/day, gal/hr, gal/min, GPD, GPH, GPM, hp, hr, Hz, in, in3, InH2O, InHg, joules, kcal, kcal/hr, kcal/lbm, kcal/SCF, kg, kg/cm2, kg/day, kg/hr, kg/m3, kPa, kPaa, kPag, KPPH, kVA, kW, 1/day, 1/hr, 1/min, lb, lb/ft3, lb/hr, liter, m, m/sec, m/sec2, m3, m3/day, m3/hr, m3/kg, mA, mbar, MBRA, MBRG, MCFH, mhos, mil, min, ml, Mlb/hr, mm, mmHg, mol, mol/m3, ms, mS/cm, mV, MW, NM3/H, Ohms, Percent, PCT_LVL, pH, PPH, ppm, psi, psia, psig, pulses, rad, rpm, S/cm, SCCM, SCFH, SCFM, sec, t/day, ton, tonne, tonne/day, VA, vars, Volts, W, yd3/day, yd3/hr	Percent
StepResponseTime	0.050 to 2.000 sec.	1.0
DigFiltTimeCnst	0.0 to 159.0 sec.	0.016

InputRange: Voltage input channels are able to read any voltage between -10 and +10. The module utilizes auto-ranging circuitry to provide high resolution even at millivolt levels. For scaling and diagnostic purposes, the range of values being measured by the channel must be specified. Several standard ranges are selectable from a list, or, a custom range can be selected by specifying Custom for the InputRange and editing Custom_Range_Low and Custom_Range_High values.

Custom_Range_Low: An optional parameter that allows you to specify a minimum input range in volts. If the reading drops below this value, an underrange error is reported. This parameter is only used when InputRange is specified as Custom.

Custom_Range_High: An optional parameter that allows you to specify a maximum input range in volts. If the reading goes above this value, an underrange error is reported. This parameter is only used when InputRange is specified as Custom.

MinScale: The module will linearly scale raw data (volts) to engineering units for each channel. The scaling algorithm uses the MinScale/MaxScale parameter values that you set. For example, given a MinScale of 0.0, a MaxScale of 100.0, and an InputRange of 1-5 Volts, if the input to the channel is 3 Volts, the scaled value will be 50.0. MinScale can be any REAL number (REAL numbers are valid between -3.4028e38 and +3.4028e38).

MaxScale: MaxScale can be any REAL number.

EngUnits: Engineering units for the scaled value can be selected from a list of common engineering units.

DigFiltTimeCnst: This parameter sets the time constant of a low-pass digital filter applied to the input data. This filter reduces non-repetitive noise from the input data and can be disabled by setting this parameter to 0.0.

StepResponseTime: This parameter sets the length of a moving-average digital filter applied to the input data. It determines the time to fully respond to an input step. Increasing this parameter reduces periodic or repetitive noise and improves repeatability and resolution. The recommended setting for this parameter is between 0.5 and 4.0 seconds.

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