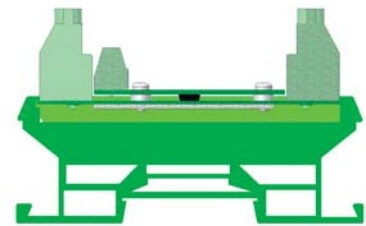
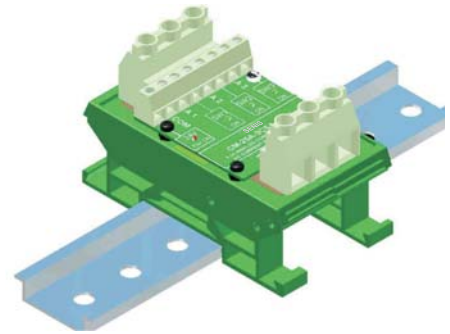


Three Channel Current Monitor

Features

- Three Primary Current Channels
- Three Analog Output of Primary AC and DC Current
- High Dielectric Isolation > 5kV^{rms}
- DIN Rail Package

The Ametes CM-XXA-3CSA is a three channel current sensing module which demonstrates the use of the Sentron CSA-1VG Hall Effect magnetic sensor IC to monitor DC or AC currents in three adjacent conductors.



Description:

The CM-XXA-3CSA current monitor consists of two stacked PCBs mounted in a standard DIN Rail package. The lower PCB has the three current conducting traces on the top side with a magnetic shield on the bottom side. The top PCB includes three CSA-1VG sensors positioned over the center of the three traces located on the lower PCB. There is 5kVrms isolation between the primary current conductors and the sensor electronic circuitry. The CM-XXA-3CSA operates from a 4.5 to 5.5VDC power source and provides an analog voltage proportional to the current for three adjacent conductors.

SPECIFICATIONS

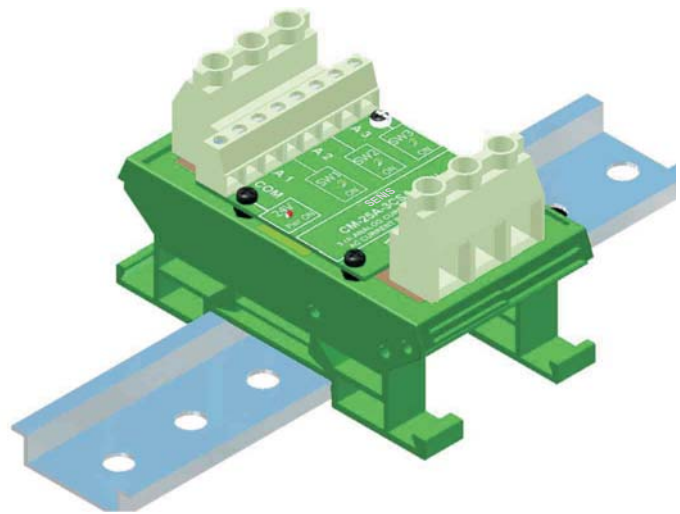
Symbol	Parameter	CM-25A-3CSA	CM-50A-3CSA	Units
I_{PN}	Primary Current, nominal continuous	25	50	A _{rms}
I_{PM}	Primary Current, max peak	32	55	A
V_{PRI}	Maximum Primary Voltage (peak)	1000	1000	V
S_A	Analog Output Sensitivity of Primary Current	40-50	30 ±5.0	mV/A
V_O	Analog Output Voltage Range	2.5 ±2.0	2.5 ±2.0	V
V_{OS}	Quiescent Voltage, $I_{pr} = 0A$	2.5 ±0.05	2.5 ±0.05	V
X	Accuracy, DC to 60Hz	<10	<10	%
X_L	Non Linearity, $I < 25A_{rms}$, 60Hz	<1	<1	%
TC_{V_o}	Temperature Coefficient, Offset Voltage	<0.2	<0.2	mV/°C
TC_{V_s}	Temperature Coefficient, Sensitivity	<200	<200	ppm/°C
r	Resolution, Primary Current	25	35	mA
V_{SUP}	Supply Voltage	4.5 to 5.5	4.5 to 5.5	V _{DC}
I_{SUP}	Supply Current Draw Max (Excluding output loads)	35	40	mA
V_D	Voltage for AC Isolation Test	5	5	kV _{rms}
BW_{VO}	Bandwidth Analog Output	DC to 75k	DC to 50k	Hz
T_A	Ambient Operating Temperature	-40 to 85	-40 to 85	°C
T_S	Ambient Storage Temperature	-40 to 85	-40 to 85	°C

Three Channel Current Monitor with current present indicator

Features

- Three Primary Current Channels
- Three Analog Output of Primary AC and DC
- High Dielectric Isolation > 5kV^{rms}
- Current Present LED (3 each Green LEDs)
- 20 to 30VDC Supply Voltage
- Three Discrete Switched Sourcing Outputs

The CM-25A-3CSA-PSW provides isolated voltage signal outputs for DC or AC currents in three primary current channels. This option also provides 3 switched sourcing outputs indicating the presence of 50-60Hz AC Currents

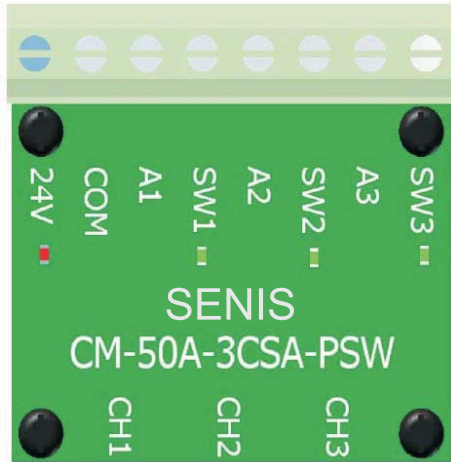


Description:

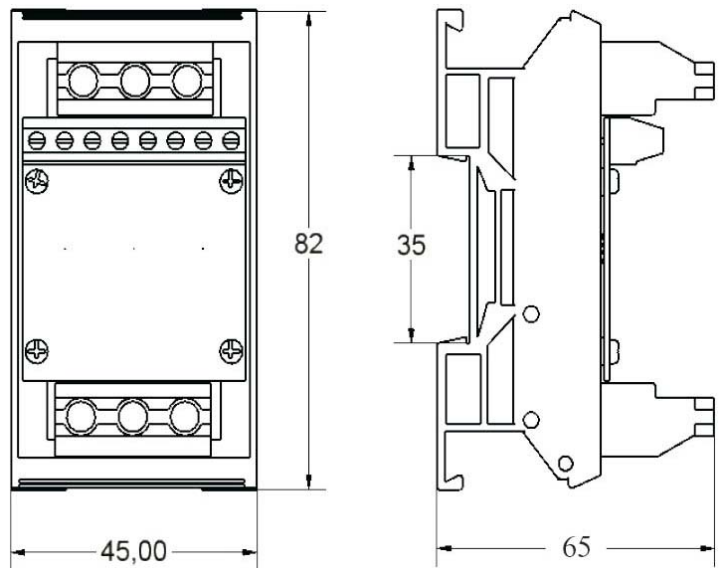
The CM-XXA-3CSA current monitor consists of two stacked PCBs mounted in a standard DIN Rail package. The lower PCB has the three current conducting traces on the top side with a magnetic shield on the bottom side. The top PCB includes three CSA-1VG sensors positioned over the center of the three traces located on the lower PCB. There is 5kVrms isolation between the primary current conductors and the sensor electronic circuitry.

SPECIFICATIONS

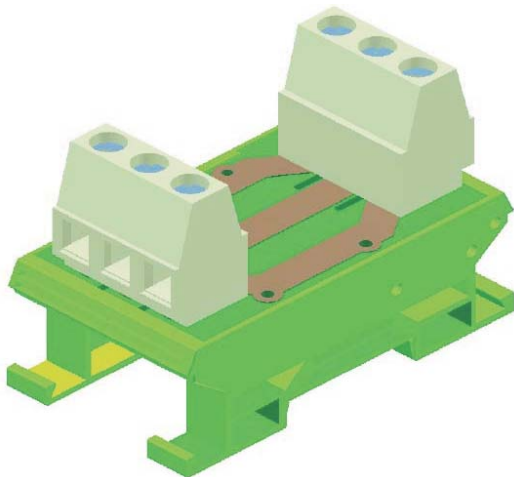
Symbol	Parameter	CM-25A-3CSA-PSW		CM-25A-PSW		Units
I_{PN}	Primary Current, nominal continuous	25	25	50	25	A _{rms}
I_{PM}	Primary Current, max peak	32	32	55	32	A
V_{PRI}	Maximum Primary Voltage (peak)	1000	1000	1000	1000	V
S_A	Analog Output Sensitivity of Primary Current	40 to 50		30 ± 5		mV/A
V_O	Analog Output Voltage Range	2.5 ± 2.0		2.5 ± 2.0		V
V_{OS}	Quiescent Voltage, $I_{pri} = 0A$	2.5 ± 0.05		2.5 ± 0.05		V
X	Accuracy, DC to 60Hz	<10		<10		%
X_L	Non Linearity, $I < 25A_{rms}$, 60Hz	<1		<1		%
TC_{V_o}	Temperature Coefficient, Offset Voltage	<0.2		<0.2		mV/°C
TC_{V_s}	Temperature Coefficient, Sensitivity	<200		<200		ppm/°C
r	Resolution, Primary Current	25		35		mA
V_{SUP}	Supply Voltage	20 to 30		20 to 30		V _{DC}
I_{SUP}	Supply Current Draw Max (Excluding output loads)	40		40		mA
V_D	Voltage for AC Isolation Test	5		5		kV _{rms}
BW_{V_o}	Bandwidth Analog Output	DC to 75k		DC to 50k		Hz
I_{SW}	50-60Hz AC Current Switch Level (Output Turns On)	N/A	0.5 to 1.5	N/A	1 to 2	I _{AC}
I_{OUT}	Max Load Current (Sourcing from Supply Voltage)	N/A	50	N/A	50	mA
$I_{OUT-OFF}$	Max Leakage current in OFF state	N/A	<20	N/A	<20	µA
TD_{ON}	Turn ON Response Time (after AC current is detected)	N/A	25 to 100	N/A	25 to 100	ms
TD_{OFF}	Turn OFF Response Time	N/A	50 to 500	N/A	50 to 500	ms



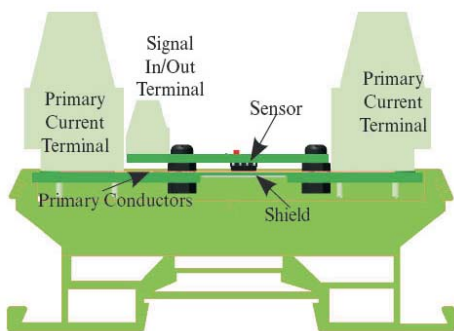
Mezzanine PCB front Panel Layout



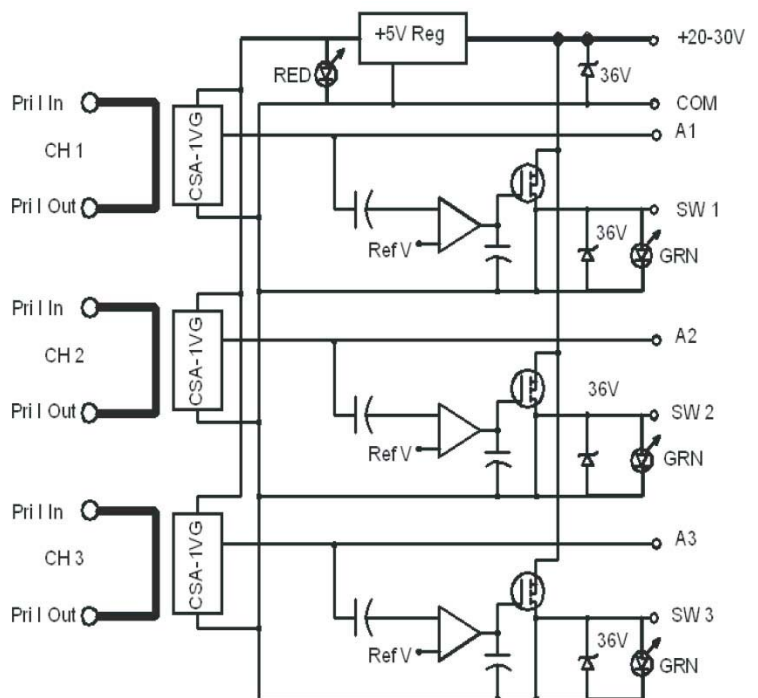
CM-50A-3CSA-PSW Outline Drawing, dimensions in mm



CM-50A-3CSA-PSW with top PCB removed to show primary current conductors



Cutaway side view of CM-50A-3CSA-PSW



CM-50A-3CSA-PSW Block Diagram