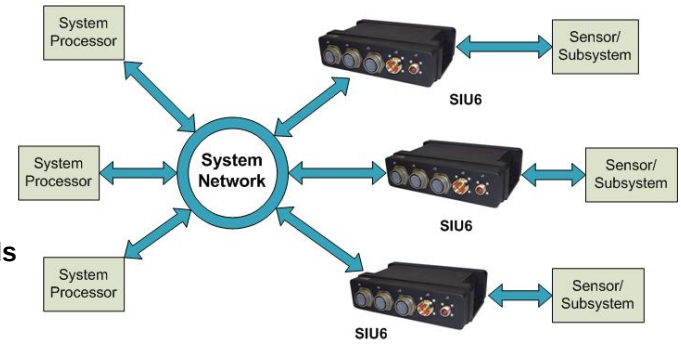
Model SIU6

SENSOR INTERFACE UNIT

FEATURES

- **High Density Multifunction I/O Subsystem**
- **I/O access and control via 10/100/1000BaseT Ethernet**
- **Integrated backplane to front panel connector configuration**
- **Intelligent I/O™ combinations of up to:**
  - 192 Programmable 0V to 60V Discrete I/O channels
  - 120 16-Bit Programmable A/D or D/A channels
  - 36 16-Bit Digital to Synchro/Resolver channels
  - 36 16-Bit Digital to LVDT Channels
  - 48 16-Bit Synchro/Resolver to Digital channels
  - 48 16-Bit LVDT to Digital Channels
  - 72 16-Bit Resistance Temperature Detector channels
- **Communications support for up to:**
  - 24 MIL-STD-1553 BC/RT/MT channels
  - 48 Independent & Isolated CANBus channels
  - 48 Programmable Sync/Async RS232/422/485 channels
  - 72 Programmable ARINC 429/575 channels
  - 48 Encoder/Counter Channels
- **Optional Processor Support**
  - PowerPC™ 8536
  - Analog Devices Blackfin® Low Power Processor
  - VxWorks®, Linux, Windows® CE
- **Continuous 'background' BIT monitoring on all channels**
- **Software Support Kit (SSK) and Drivers available**
- **Low profile, rugged base-plate cooled chassis**
- **-40° C to +71° C Operation**



DESCRIPTION

Taking advantage of our high density Multifunction I/O and Power Supply products, the SIU6 offers unprecedented Intelligent I/O™ in an integrated compact conduction cooled system for data acquisition, distribution and processing applications. Our unique modular architecture allows for a wide selection of different I/O and communications functions such as A/D, D/A, TTL, RTD, Discrete I/O, Synchro/Resolver-to-Digital and LVDT, Digital-to-Synchro/Resolver and DLV, BC/RT/MT MIL-STD-1553, high speed Sync/Async RS232/422/485, ARINC 429 and CANBus. This approach increases package density, saves enclosure slots and reduces power consumption. A fully integrated backplane and front panel architecture eliminates the need for custom internal cabling or wiring. Continuous background BIT support monitors each channel. A fault is immediately reported and the specific channel is identified. A processor option allows pre-processing of raw I/O data. This capability can provide significant benefits including:

- Formatting and packetizing I/O data for immediate use by the system or mission processor
- Specific routines can be implemented for individual data channels. A typical example would be an average of data over a specified number of samples.
- Allow routines to be implemented for multiple data channel monitoring and event handling. For example allow a discrete channel activation to output a specific D/A channel.

Processor Functions

AD Blackfin®	**Module**	**Flash**	**SDRAM**	**Freq**
	U2	8 MB	16 MB	500 MHz
PowerPC™	**Module**	**Flash**	**SDRAM**	**Freq**
	U3	256 MB	1 GB DDR2	1.25 GHz

I/O Functions

A/D Converter	**Module**	**Channels**	**Input Scaling**
	C1	10	10, 5, 2.5, or 1.25 VDC
	C2	10	40, 20, 10 or 5 VDC
	C3	10	0-25 mA
	C4	10	50, 25, 12.5 or 6.25 VDC
D/A Converter	**Module**	**Channels**	**Output Range per Channel**
	F1	10	±10 or 0-10 VDC @ 20 mA
	F3	10	±5 or 0-5 VDC @ 20 mA
	F5	4	±20 or 0-20 VDC @ 100 mA
	J3	10	±1.25 or 0-1.25 VDC @ 20 mA
	J5	10	±2.5 or 0-2.5 VDC @ 20 mA
	J8	4	±20 to ±80 VDC @ 10 mA
Discrete I/O	**Module**	**Channels**	**Input/Output Range**
	K6	16	0 – 60 VDC (Spikes to 100V)
	K9	48	0 – 60 VDC (Spikes to 100V)
TTL	**Module**	**Channels**	**Input/Output Range**
	D6	48	0 – 5.5 V
	D7	16	0 – 5.5 V
Differential Transceiver	**Module**	**Channels**	**Input/Output Range**
	D8	11	-0.25V to +5V

Power Supply Specifications

Input Power	18 to 36 VDC or 115/230VAC, 47 - 440 Hz, 1 or 3 Phase, per MIL-STD-704
Transient Protection	Voltage Transients MIL-STD-704B-F, Standard Voltage Spikes MIL-STD-1275/704, Standard MIL-STD-1275 Cranking, Option 50ms Ride-Through MIL-STD-704A-F, Option Voltage Transients MIL-STD-704A, Option Reverse Polarity Protection, Option

Environmental Specifications*

TYPE	COMPLIANCE DETAILS
Shock	MIL-STD-810G, Procedure I, Method 516.6, 18 impact shocks; 40g spectra per Table 516.6-1 and Fig. 516.6-8, (Operational)
Random Vibration	MIL-STD-810G, Method 514.6, 0.1g²/Hz from 100 to 1K Hz., -3dB octave 5-100 Hz and -6dB 1K-2K Hz, (Operational)
Acceleration	MIL-STD-810G, Method 513.6, Procedure ll, 12.0 g in all directions, (Operational)
Operating Temperature	-40° C to +71º C base-plate temperature
Humidity	Up to 95% relative humidity.
Altitude	Up to 70,000 feet
EMI/EMC[1]	MIL-STD-461F; CE102, CS101, CS106, CS114, CS115, CS116, RE101, RE102, RS101, RS103 (using proper shielded cables & system practices)
Additional Qualifications	Rain, Fungus, Salt Fog, Sand and Dust, Explosive Atmosphere, Hose Down, Crash Safety

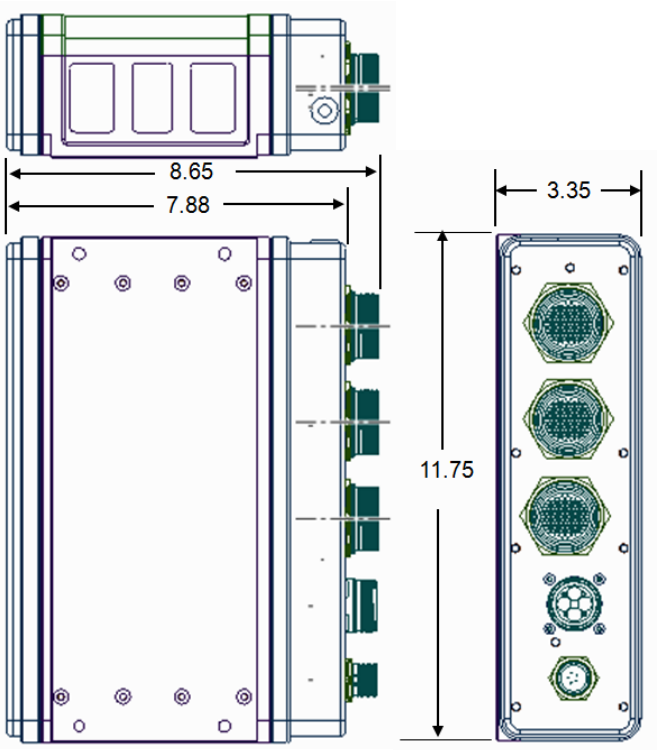
Communication Functions

ARINC 429/575	**Module**	**Channels**	**Frequency**
	A4	6	100 KHz or 12.5 KHz
MIL-STD-1553	**Module**	**Channels**	**Operational Modes**
	N*	2	BC, RT, BM, BM/RT
CANBus	**Module**	**Channels**	**Message Buffer**
	P6	4	RX/TX (32 Kbytes)
RS-232/422/485	**Module**	**Channels**	**Communication**
	P*	Up to 6	Async / Sync

Measurement and Simulation Functions

Synchro Simulation	**Module**	**Channels**	**Power**
	3*,4*	1	3.0 VA / channel
	1*,2*	2	1.5 / 2.2 VA / channel
	6*	3	0.25 VA / channel
LVDT Simulation	**Module**	**Channels**	**Power**
	5*	2/4	1.2VA / channel
	5*	3	0.1 VA / channel
LVDT Measurement	**Module**	**Channels**	**Frequency**
	L*	4	360 Hz to 20 KHz
Synchro Measurement	**Module**	**Channels**	**Frequency**
	S*	4	50 Hz to 20 KHz
Encoder	**Module**	**Channels**	**Counter Modes**
	E7	4	SSI, Encoder, Quadrature
RTD	**Module**	**Channels**	**Update rate**
	G4	6	16.7 Hz/channel
Reference	**Module**	**Channels**	**Power**
	W*	1	6 VA

* Indicates wide selection of options.



* Qualification pending

[1] Reference SIU6 Hardware Manual for frequency range and/or compliance details

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