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Instruction Manual

SSI-Interface

SSI 552

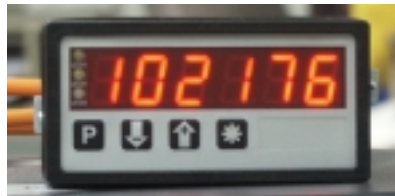
All technical data subject to change without notice.

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General Features

The function of this module is to continuously read data from 1 up to 32 sensors. The sensors share one common SSI-bus. The sensor selection is made automatically. The module-controller selects the sensors in upgoing order starting with sensor 1..2..3.. up to the last sensor. After the sensor is selected, the module puts 24 clock-pulses to the clock-bus. With each pulse a databit is read from the data-bus and stored in its dual ported memory. This memory is readable via VME-bus and via the SSI3020-Display Ports.

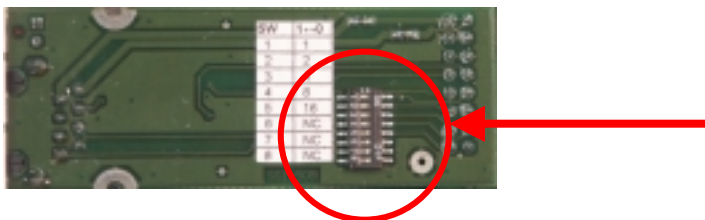
The SSI552 module is based on the SSI550 module and fully compatible with it. The additional features are two SSI3020-IO submodules to visualize any of the possible 32 encoder values with a SSI-display like ERMA SSI-3020-1100.



Submodule Description

SSI-505 Submodule:

This submodule communicates with up to four E-Mux 005 Encoder Multiplexer boxes. It uses an SSI-like protocol. The distance between the E-Mux and this module can be up to 300 m. Uninet cable 4x2 twisted pair wires are recommended.



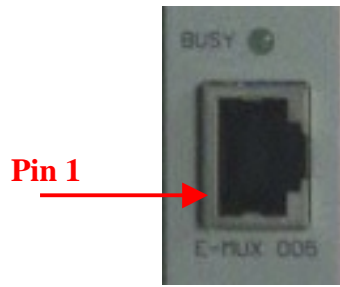
The total amount of sensors is adjustable via DIP-Switch:

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	Selected
0	0	0	0	0	NC	NC	NC	SENSOR 1
1	0	0	0	0	NC	NC	NC	SENSOR 1..2
0	1	0	0	0	NC	NC	NC	SENSOR 1..3
1	1	0	0	0	NC	NC	NC	SENSOR 1..4

and so on...

Each channel takes 203us for readout. When looping over e.g. 8 channels the update-rate for each channel is 1.625ms.

SSI-505 RJ45 Connector:



Connector Cable:		
Color	RJ45 8-pol.	function
bn	1	SSI, Data +
bn/ws	2	SSI, Data -
bl	3	SSI, Address +
bl/ws	4	SSI, Address -
or	5	SSI, clock +
or/ws	6	SSI, clock -
gn	7	
gn/ws	8	

BUSY LED Shows successful data transfer from the E-Mux 005 box

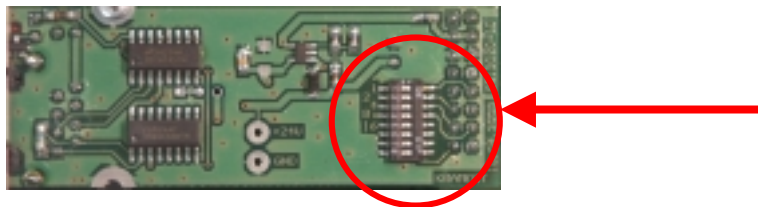
SSI-IO Data-Input
 RS422 , impedance 120 Ohm

 Address/Data-Output
 RS422 , into 120 Ohm

 Clock-Output
 RS422 , into 120 Ohm

SSI-3020 Submodule:

Two SSI3020-IO submodules visualize any of the possible 32 encoder values with a SSI-display like ERMA SSI-3020-1100. It accepts SSI clock from the connected device and supports the selected encoder datas.

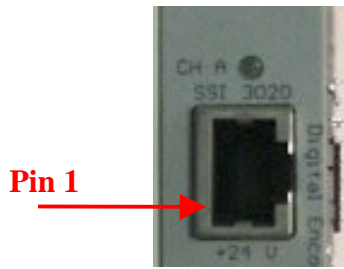


Dip Switch Select of SSI3020-IO Submodule:

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	Select
0	0	0	0	0	NC	NC	NC	Encoder 1
1	0	0	0	0	NC	NC	NC	Encoder 2
0	1	0	0	0	NC	NC	NC	Encoder 3
1	1	0	0	0	NC	NC	NC	Encoder 4

and so on...

Display Connector:



Connector Cable:			
Color	RJ45 8-pol.	SSI 3020	function
bn	1	1	SSI, clock +
bn/ws	2	2	SSI, clock -
bl	3	3	SSI, Data +
bl/ws	4	4	SSI, Data -
or	5		
or/ws	6		
gn	7	11	+24V / 50mA
gn/ws	8	12	GND

CH A/B LED Shows the LSB databit from the selected encoder

SSI-IO Data-Output
 RS422 , into 120 Ohm
 Clock-Input
 RS422 , impedance 120 Ohm

Display Supply +24V/50mA

VME Interface

Bit Assignment:

With each loop (read-out of selected sensors) an 8 bit event counter is incremented. This event counter is placed on the MSByte of the 32 bit sensor data.

D24..D0 Sensor Data (24 Bit)
 D31..D24 Event-Counter

Sensor-Address Assignment:

Memory 32 x 32 Bit

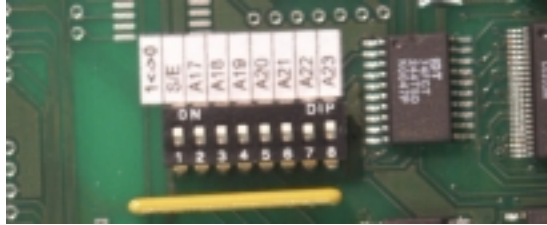
The address range is selected by two 8 Bit-Dip switches (address selector, A31..A17). This address range is accessible via read and write commands (A32D32 or A24D32).

Base address + offset:								
	0x00	Sensor 1	0x20	Sensor 9	0x40	Sensor 17	0x60	Sensor 25
	0x04	Sensor 2	0x24	Sensor 10	0x44	Sensor 18	0x64	Sensor 26
	0x08	Sensor 3	0x28	Sensor 11	0x48	Sensor 19	0x68	Sensor 27
	0x0C	Sensor 4	0x2C	Sensor 12	0x4C	Sensor 20	0x6C	Sensor 28
	0x10	Sensor 5	0x30	Sensor 13	0x50	Sensor 21	0x70	Sensor 29
	0x14	Sensor 6	0x34	Sensor 14	0x54	Sensor 22	0x74	Sensor 30
	0x18	Sensor 7	0x38	Sensor 15	0x58	Sensor 23	0x78	Sensor 31
	0x1C	Sensor 8	0x3C	Sensor 16	0x5C	Sensor 24	0x7C	Sensor 32

Base Address Settings

The RAM of the SSI-552 is located between baseaddress+0x00..0x7C (32 x 4Byte width).
The base address can be mapped with the Dip Switches to 128 Kbyte borders within the VME address space.

Access via A24D32 Standard
 A32D32 Extended



This Standard/Extended address range switch is marked on the print with „S/E“. Standard address range (A24) is selected with the switch in the Down-position. The extended address selector switch (A31..A24) is then disabled.

Base address	A31 ... A24	A23	A22	A21	A20	A19	A18	A17		A24/A32 Switch
with the STA/EXT-Switch = 1: STANDARD										
0x000000	x	0	0	0	0	0	0	0		1
0x020000	x	0	0	0	0	0	0	1		1
0x040000	x	0	0	0	0	0	1	0		1
0x060000	x	0	0	0	0	0	1	1		1
with the STA/EXT-Switch = 0: EXTENDED										
0x00000000	0	0	0	0	0	0	0	0		0
0x00020000	0	0	0	0	0	0	0	1		0
0x00040000	0	0	0	0	0	0	1	0		0

a.s.o.

Address Modifier:

	Addressing Space	AM-Codes
STA	STANDARD A2..A23	3D, 39
EXT	EXTENDED A2..A31	0D, 09

Temperature Range: Ventilated VME-Crate is required.
Power Requirements: approx. 1 A at +5V
Physical: Single width VME module.