

AMI Semiconductor

# AMIS-49200 Fieldbus MAU Chip

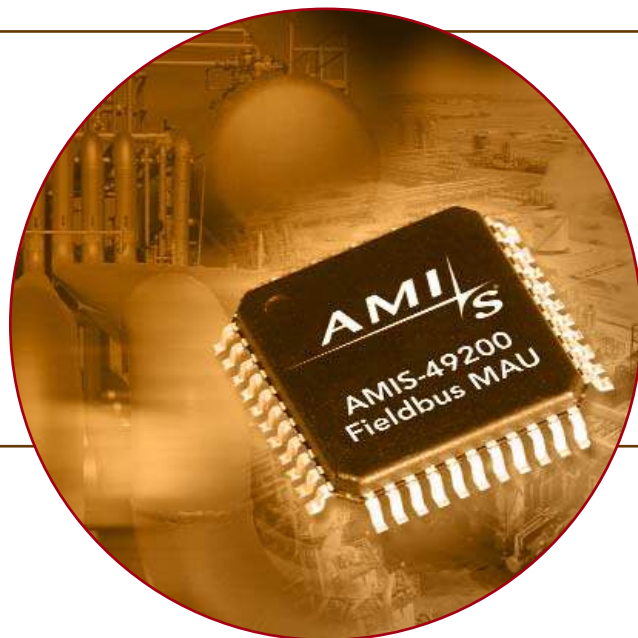
## Key Features

- IEC-61158-2, H1 (ISA-S50.02-1992), Type 111 and Type 112 (FF-816) compliant
- -40°C to 85°C
- 44-pin plastic LQFP (Green/RoHS compliant)
- Low current consumption: 500µA typical
- Standard MDS/MAU interface
- 31.25kbps voltage mode
- Dual voltage regulators (3 and 6.2V)
- Voltage level monitoring

## Product Description

The AMIS-49200 Fieldbus Medium Attachment Unit (MAU) can be used in applications that meet the Foundation Fieldbus and Profibus PA standards. It is compatible with requirements of the IEC-61158-2, H1 (ISA-S50.02-1992, EN 50170 (formerly DIN 19245)) physical layer standard.

The AMIS-49200 Fieldbus MAU is a near pin-for-pin replacement for Yokogawa µSAA22Q. This includes the elimination of some capabilities and specifications of the µSAA22Q.



In most applications, the AMIS-49200 can be used as a replacement for the µSAA22Q. Some external component values may have to be changed but, in most cases, the layout of the circuit board will not have to change.

## Normal Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Analog Supply Voltage	VCC	4.75	5	6.2	V	Supply voltages are configurable or can be supplied from off-chip
Digital Supply Voltage	VDD	2.7	3	VCC - 1.1V	V	Supply voltages are configurable or can be supplied from off-chip
Operating Temperature	Toperating	-40		85	°C	
Current Compensation	ICC		500	800	µA	25°C, SHUNT current = 1mA, No current from series regulator

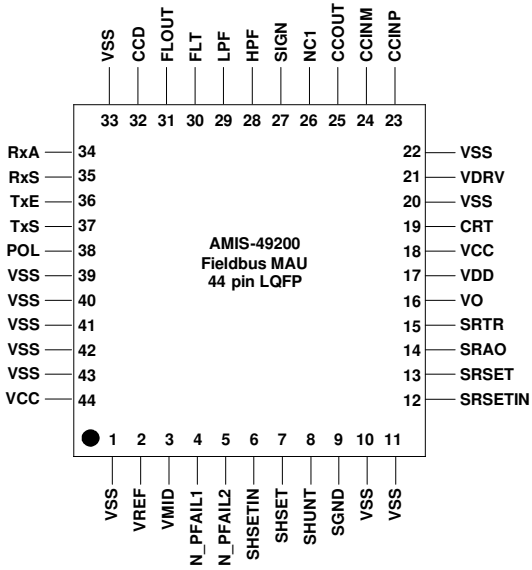
## CMOS Parameter Specifications

CMOS Parameter Specs	Symbol	Min.	Max.	Units
Input High Voltage	V <sub>IH</sub>	0.7 • V <sub>DD</sub>	V <sub>DD</sub>	V
Input Low Voltage	V <sub>IL</sub>	0	0.3 • V <sub>DD</sub>	V
Input High Current	I <sub>IH</sub>		1	µA
Input Low Current	I <sub>IL</sub>		-1	µA
Schmitt Negative Threshold	V <sub>t-</sub>	0.2 • V <sub>DD</sub>		V
Schmitt Positive Threshold	V <sub>t+</sub>		0.8 • V <sub>DD</sub>	V
Schmitt Hysteresis	V <sub>h</sub>	1		V

## Ordering Codes

Marketing Name	Description	Device No.
AMIS-49200	Fieldbus MAU Chip	19699-002-XTD (tray) or -XTP (tape & reel)
EVK-49200	AMIS-49200 Evaluation Kit	EVK-49200

# 44 PIN LQFP Pin Diagram and Cross-Reference Table



Pin No.	μSAA22Q	AMIS-49200
1	NC	TEST1
11	NC	GND
18	VCC	VCC
22	NC	GND
26	NC	TEST2
33	NC	GND
39	JAB/	GND
41	CJB	TEST3
42	VTX	TEST4
43	VSL	TEST5
44	VCC	VCC

Differences between the AMIS-49200 Fieldbus MAU and the Yokogawa μSAA22Q are listed in the cross-reference table.

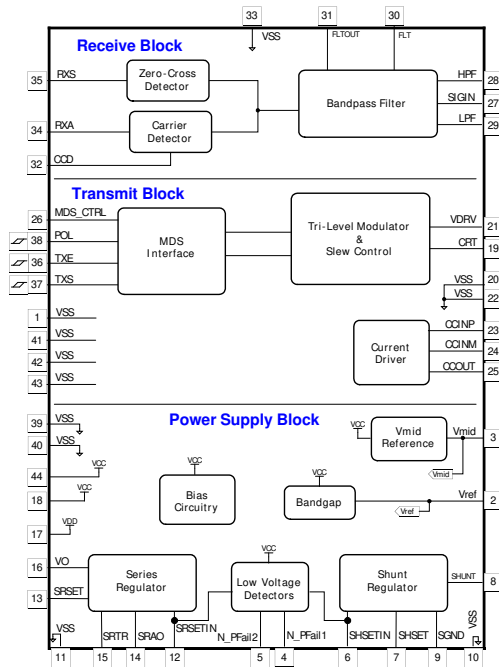
Pins 11, 22 and 33 may be left N/C, however, we recommend connecting them to ground to improve noise immunity.

Pin 39 is the ground for the voltage reference and must be connected to system ground.

TEST1 – TEST5 must be connected to ground.

The AMIS-49200 was designed to have excellent EMC performance. In order to achieve the full performance, VCC Pins 18 and 44 should be connected together.

## Block Diagram



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