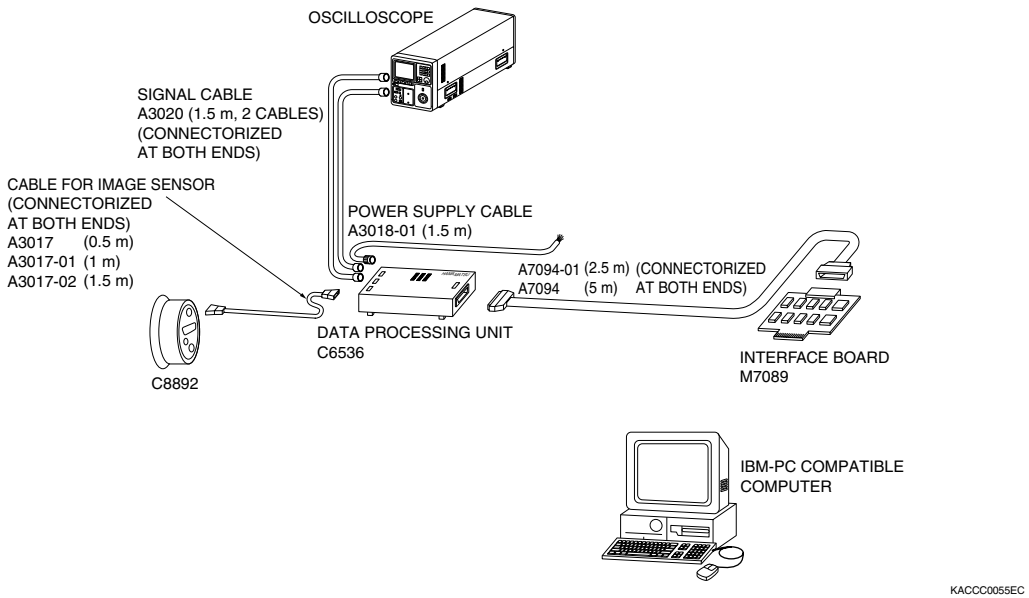
Multichannel measurement unit
C6536, M7089

Peripheral devices for NMOS multichannel detector head

To facilitate multichannel measurement and data analysis, Hamamatsu provides a complete line of NMOS multichannel detector head and peripheral devices including a data processing unit and interface board for connection to a PC.

■ Typical connections of NMOS multichannel detector head to peripheral devices



● Data processing unit C6536

C6536 converts video signals from an NMOS linear image sensor into 12-bit digital signals. C6536 is comprised of a 12-bit A/D converter, memory controller and pulse generator for image sensor.

The output signal from an image sensor is A/D converted at high speeds and buffered in the internal memory. By handshaking the internal controller with an external PC, the data can be transferred in parallel according to the PC operating speed.

● Interface board M7089

M7089 is an I/O board specifically designed for interface with an IBM PC/AT compatible computer. By installing M7089 into the extension slot of the PC, data can be easily handled between data processing unit C6536 and the PC by 12-bit high-speed transfer. This allows analyzing the output of NMOS linear image sensors on the PC and also controlling the NMOS linear image sensor integration time from the PC.

● Cables

Dedicated cables needed to make connections between the NMOS multichannel detector head and peripheral units are available.

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Data processing unit C6536

C6536 is a data processing unit designed specifically for Hamamatsu image sensor driver circuits and multichannel detector heads. C6536 is capable of high-speed signal readout and data processing with high resolution so that the fullest performance and characteristics can be obtained from various types of image sensors. Even in high-speed measurements at low light levels, C6536 delivers satisfactory performance. The unit is compact yet has shielding effects against external noise. C6536 is also designed for easy operation and data control.
C6536 consists of a buffer amplifier, 12-bit A/D converter, memory, controller and pulse generator. The A/D converted data is temporarily stored in the buffer memory and then transferred in parallel to an external PC by handshaking the internal controller with the PC.

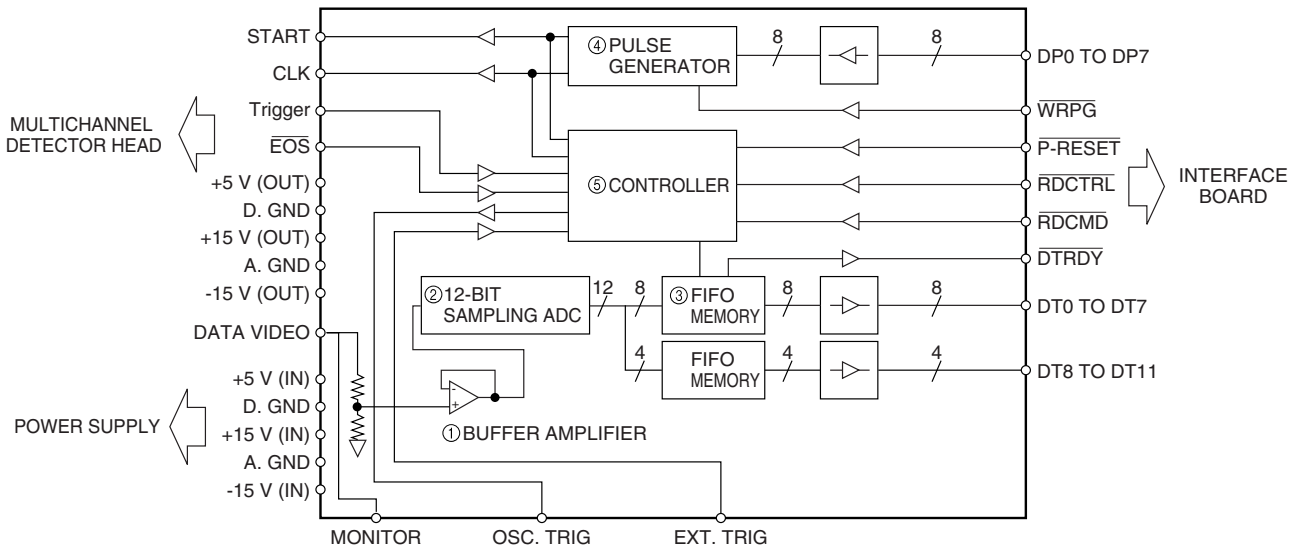
Features

- High resolution: 12 bits
- High-speed data conversion: 1 MHz Max.
- Lower power consumption
- Built-in buffer memory
- Compact size

■ Configuration

C6536 consists of the following parts.
① Buffer amplifier
② Sampling ADC
③ Buffer memory (FIFO)
④ Pulse generator
⑤ Controller

■ Block diagram



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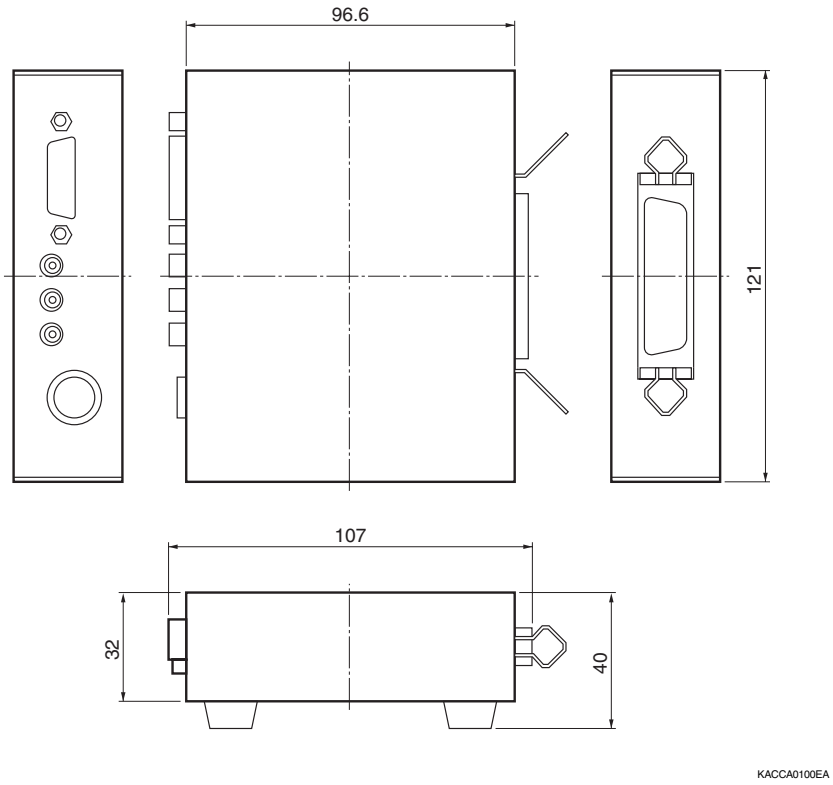
■ Specifications

Parameter		Value
Scan rate		1 MHz Max.
Data output		12 bits
Data accuracy		11 bits
Buffer memory		1024 words
Output code		Straight binary
Input power supply	+15 V	50 mA Max.
	-15 V	30 mA Max.
	+5 V	200 mA Max.
Data input range		0 to 10 V
Dimensions		121 (W) × 107 (H) × 40 (D) mm
Weight		300 g approx.

■ Dimensional outline (unit: mm)



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Interface board M7089

M7089 is an interface board specifically designed for connection to the ISA bus in an IBM PC/AT compatible computer, in order to input or output the control signals and data signals between the PC and C6536 data processing unit. By handshaking the PC with the internal controller of the data processing unit, 12-bit (or 16-bit) data signals can be transferred in parallel between them.
The I/O address can be set from 0000H to 0FFFH (factory preset: 0300H) in 4 byte steps by using the DIP switch on the board.

Features

- Works with various IBM-PC compatible computer (ISA bus)

■ Absolute maximum ratings

Parameter	Value	Unit
Operating temperature	0 to 50 *1	°C
Storage temperature	-20 to 70 *1	°C

*1: No condensation.

■ Specifications

Parameter	Specification
Data bus size	16 bits
I/O address	Top address setting by rotary switch (factory preset: 0300H) *2
Power supply	+5 V ± 5 %
Input specifications	TTL level input
Output specifications	TTL driver output
Signal extension distance	5 m approx. (depending on wiring conditions)
Use connector	D-sub 37 pin XM3B-3722-501F equivalent (made by OMRON, socket type)
Weight	100 g approx.

*2: Do not set in the range between 0000H and 0100H.

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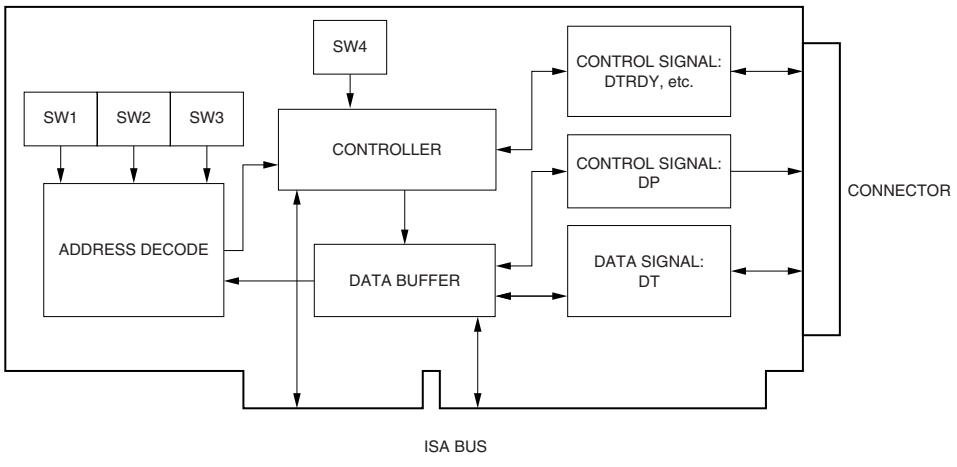
■ Configuration diagram



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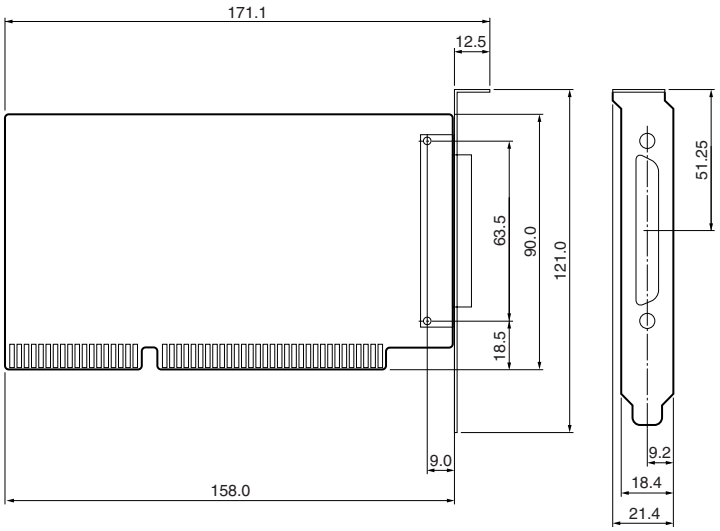
■ Dimensional outline (unit: mm)



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