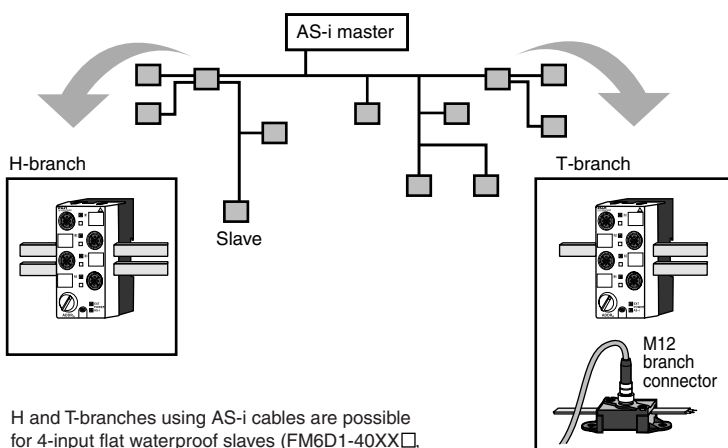


## Flexible wiring method

AS-i enables highly flexible wiring. Three kinds of network topology, tree, line, and star, are available.

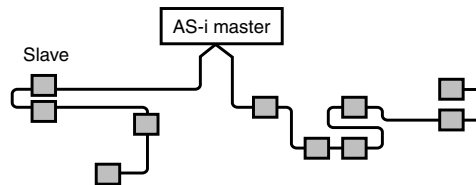
Conventional wiring and cable quantities can be greatly reduced.

### Tree structure

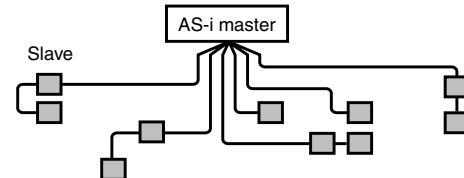


H and T-branches using AS-i cables are possible for 4-input flat waterproof slaves (FM6D1-40XX□, FM6DB1-40XX□).

### Line structure

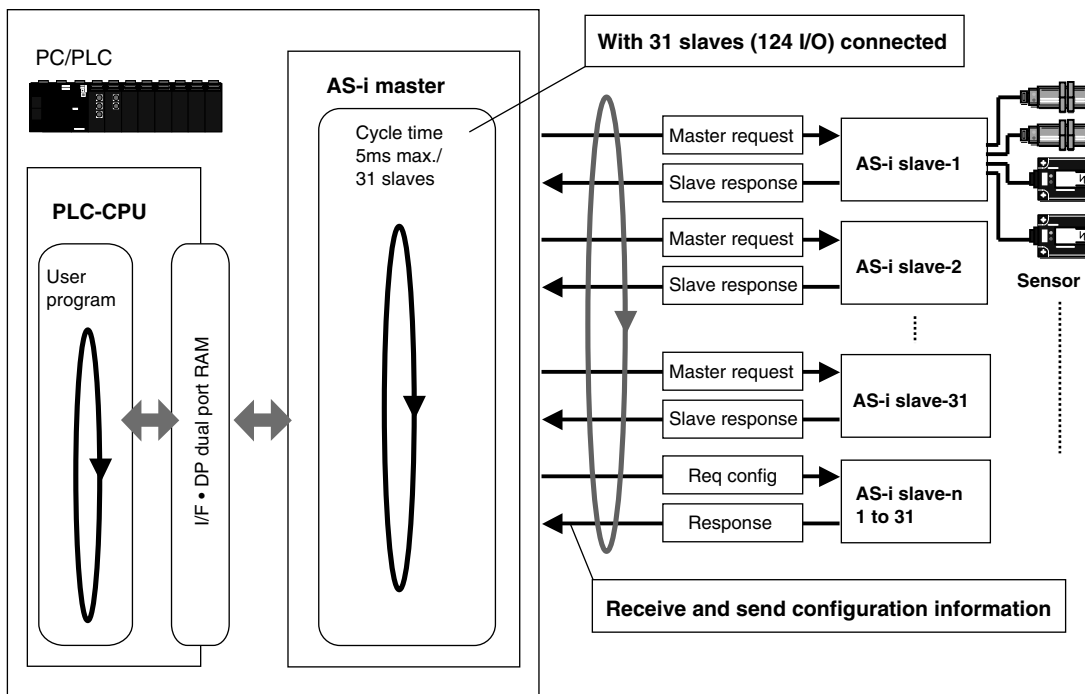


### Star structure



## High-speed response

- The data transmission time (cycle time) is approx. 5ms.
- Self diagnosis is performed simultaneously on slave configuration information.

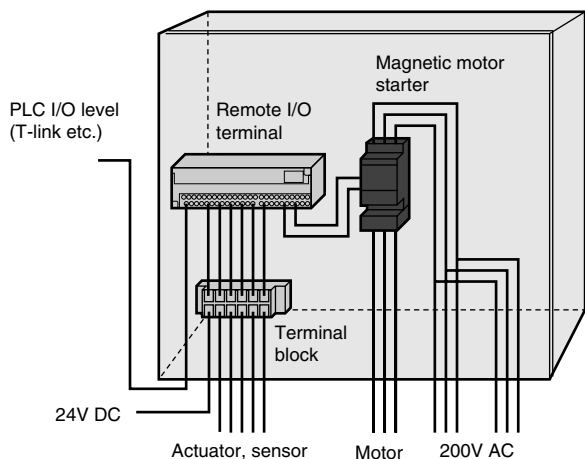




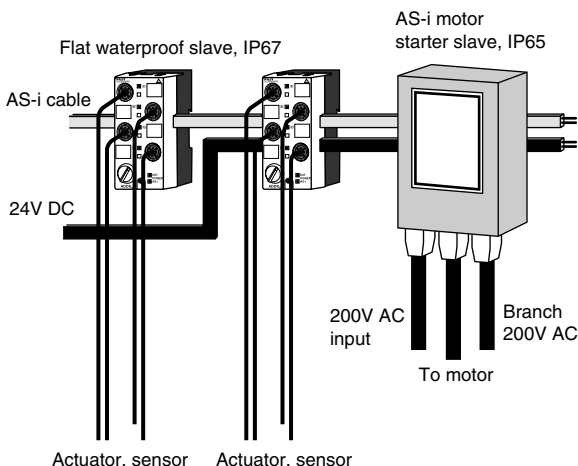
## ■ Superior environmental resistance

Slaves now have outstanding environmental resistance. This reduces the number of relay boxes required and contributes to downsizing.

### Conventional configuration



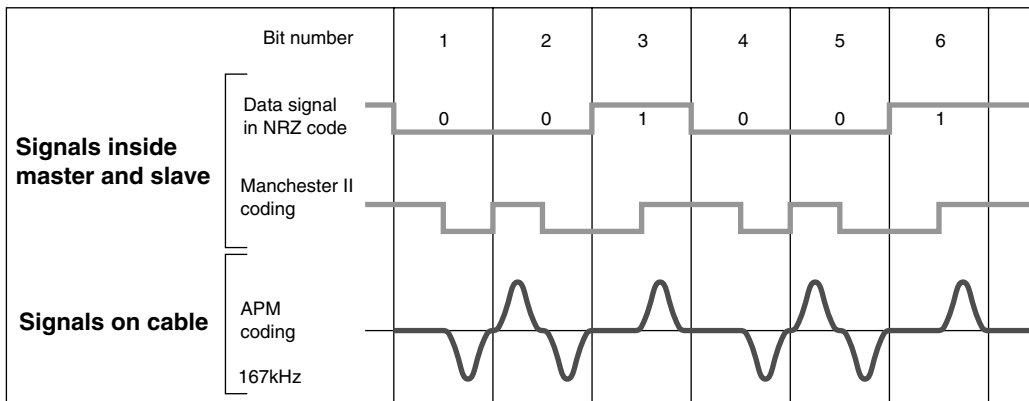
### AS-i bus configuration



05

## ■ Data integrity

Transmission signals employing a  $\sin^2$  waveform have superior noise immunity.



In AS-i, data signals are first encoded in Manchester II code, and are then sent out on AS-i cable in  $\sin^2$  waveform using alternating pulse modulation (APM). APM has the following advantages.

### • Emission

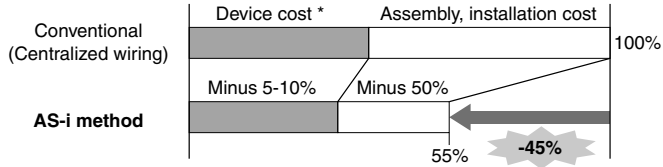
As the  $\sin^2$  waveform has a narrow spectrum bandwidth, noise radiated from AS-i cables does not affect other devices

### • Immunity

As APM has good regularity and redundancy, very effective error detection is possible to ensure highly reliable data.

# AS-Interface Features

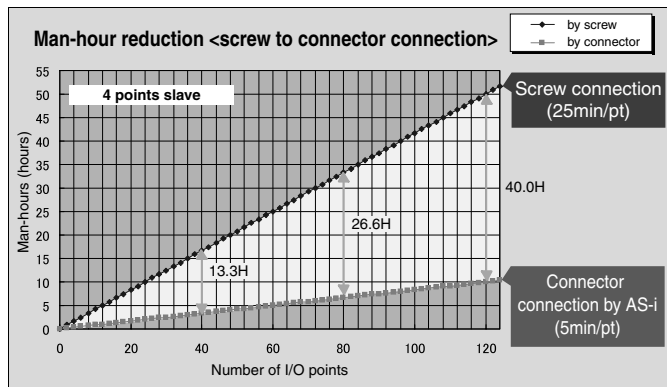
## ■ Cost savings with AS-i Example of a conveyance line



\* Cost includes controllers, I/O devices, cables, sensors, relay boxes, etc.

The figure on the left is an example of the cost savings for one of our customers. On average, about 30% can be saved with most equipment by introducing AS-i. Though the cost of introducing AS-i devices may be higher, most 15% to 30% savings can be expected in most cases.

## ■ Man-hour savings



The figure on the left is an example of lower man-hours for one of our customers. The man-hours include the following:

1. Measuring cable length (tape measure)
2. Cutting cable (nipper)
3. Skinning sheath (wire stripper)
4. Attaching crimp terminal (crimping tool)
5. Connecting cable to terminal (screwdriver)
6. Checking connections

\* Tools in parentheses for each task are not required for AS-i connector connection.

The more I/O points and the higher the pay, the greater the cost savings.

## ■ Smaller control panel

