Communication & Networking

IDEC

www.IDEC.com/communication

Vertical side tabs:
OI Touchscreens | PLCs | Automation Software | Power Supplies | Sensors | **Communication** | Barriers

AS-Interface Overview
(Actuator Sensor Interface)

MicroSmart
Pentra

See PLC section for more information.
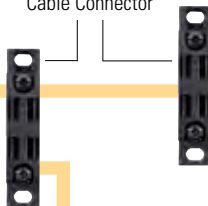
73W   145W

Visit www.IDEC.com/powersupply

SX5A AS-Interface Safety
Contact IDEC for more information.

AS-Interface Flat
Cable Connector

SX5A AS-Interface I/O modules

4 inputs
2 inputs/2 outputs

4 inputs/3 outputs

4 inputs
4 inputs/3 outputs

Contact IDEC for more information

SX5A AS-Interface Safety Communication
Terminal (Safety Slave)

IDEC SmartRelay
(See PLC section for more
information)

Emergency Stop
Switch Box

Safety Interlock Switches
Contact IDEC for more information

Link to the world and reduce wiring at the same time!

SwitchNet Control Units directly connect to an AS-Interface network

Panels can be built with substantially less wiring at a lower total cost.

- Signals and power are carried through two wires.
- A maximum of 62 switches and pilot lights can be connected. The wire length can be extended to 300m by using two repeaters.
- Spring clamp terminals save wiring time.

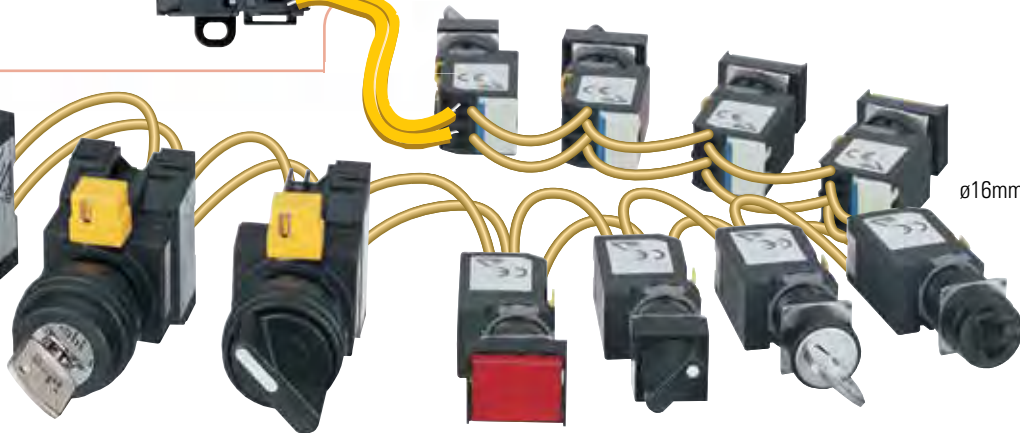Each control switch or pilot light contains a communication chip (AS-Interface Ver. 2.1).

XA & XW E-Stops

FB Enclosures

T-branch Connector

Contact IDEC for more information.
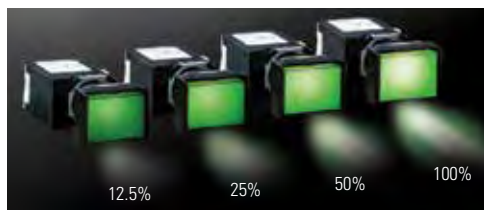
ø16mm L6 Series

ø22mm HW Series

Contact IDEC for more information.

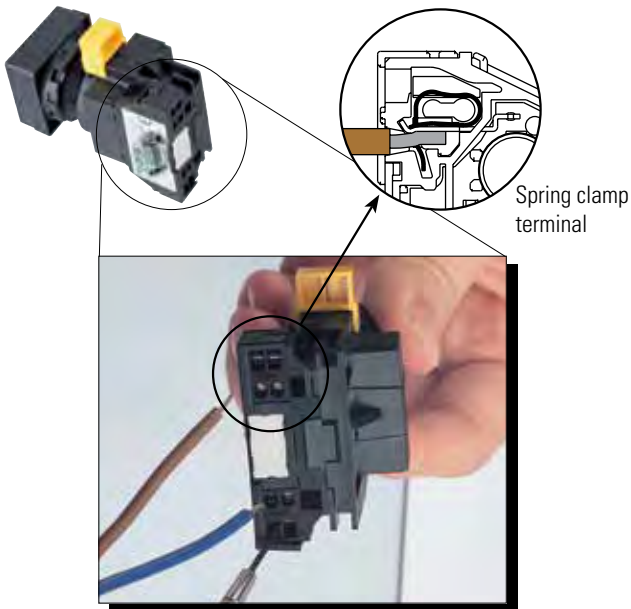### Pilot lights & Illuminated Pushbuttons Brightness Control

Illumination can be controlled at four levels according to a command from the AS-Interface master. Dynamic displays and energy savings are possible.

12.5%   25%   50%   100%

L6 Pilot Lights
See Switch & Pilot Light section.

OI Touchscreens

PLCs

Automation Software

Power Supplies

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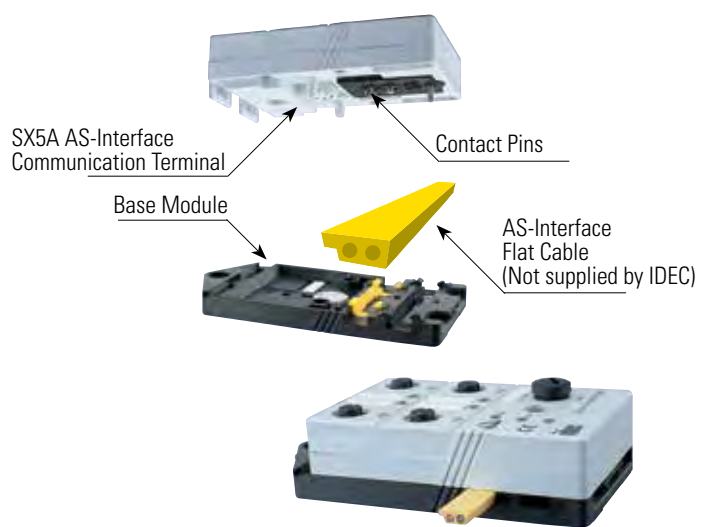
Easy & Flexible

Quick & Secure Connection

Spring clamp terminal

Spring clamp reduces wiring time

SwitchNet control units feature spring clamp terminals, eliminating the need for tightening screws.

Easy Wiring

SX5A AS-Interface Communication Terminal

Contact Pins

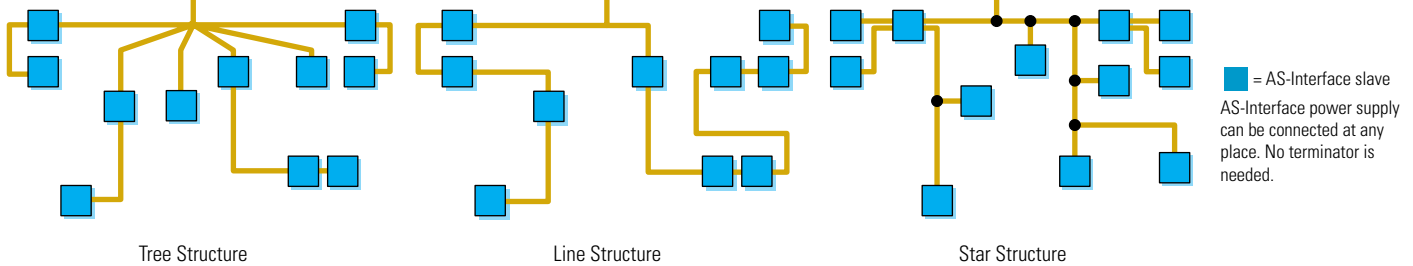Base Module

AS-Interface Flat Cable (Not supplied by IDEC)

Contact pins pierce through the cable's insulation and make secure contact with the copper conductor. After disconnecting the AS-Interface communication terminal, the elasticity of the sheath closes the pierced holes and maintains insulation.
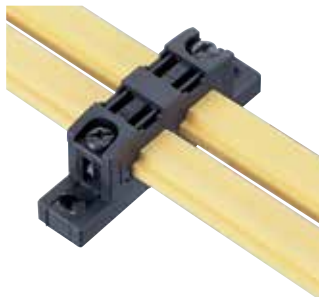

AS-Interface Master

AS-Interface Master

AS-Interface Master

■ = AS-Interface slave

AS-Interface power supply can be connected at any place. No terminator is needed.

Tree Structure

Line Structure

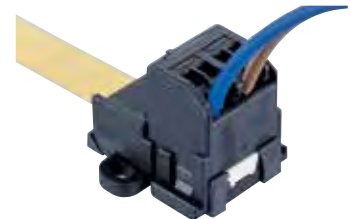Star Structure

Connectors

Three types of connectors are available for designing the panel layout.
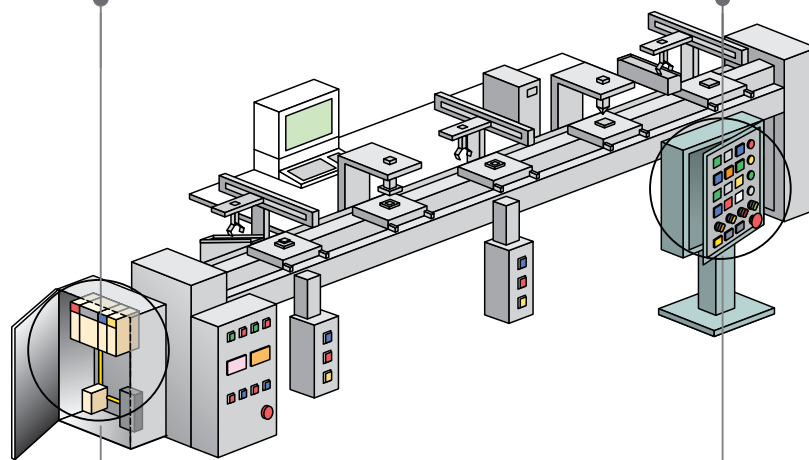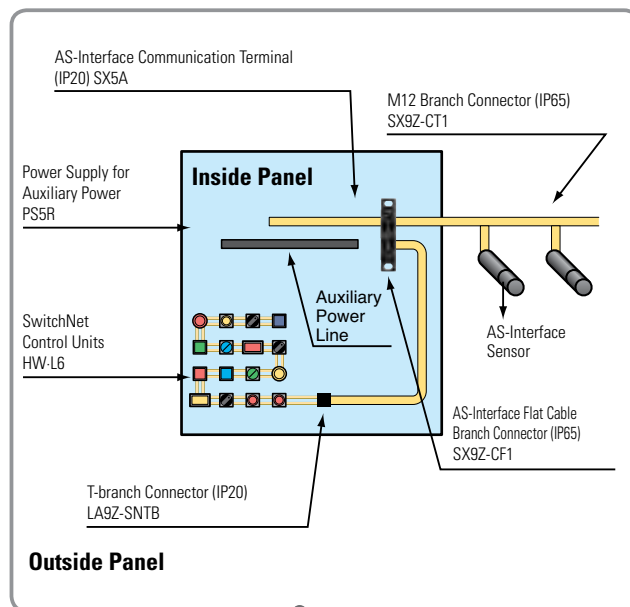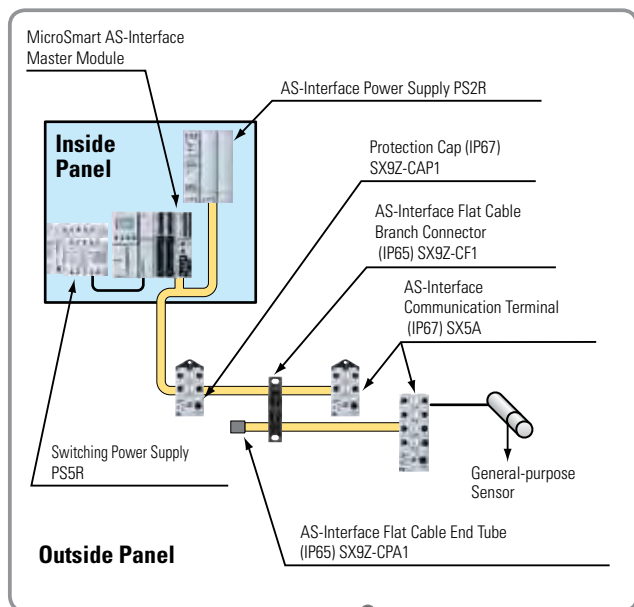

AS-Interface Flat Cable Branch Connector (IP65)
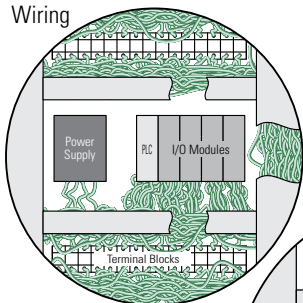
M12 Branch Connector (IP65)

T-branch Connector (IP20)

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Space & Wire Savings

MicroSmart AS-Interface Master Module

AS-Interface Power Supply PS2R

Inside Panel

Protection Cap (IP67) SX9Z-CAP1

AS-Interface Flat Cable Branch Connector (IP65) SX9Z-CF1

AS-Interface Communication Terminal (IP67) SX5A

Switching Power Supply PS5R

General-purpose Sensor

AS-Interface Flat Cable End Tube (IP65) SX9Z-CPA1

Outside Panel

AS-Interface Communication Terminal (IP20) SX5A

M12 Branch Connector (IP65) SX9Z-CT1

Inside Panel

Power Supply for Auxiliary Power PS5R

Auxiliary Power Line

SwitchNet Control Units HW-L6

AS-Interface Sensor

AS-Interface Flat Cable Branch Connector (IP65) SX9Z-CF1

T-branch Connector (IP20) LA9Z-SNTB

Outside Panel

Conventional Wiring

Power Supply | PLC | I/O Modules

Terminal Blocks

AS-Interface Wiring

Power Supply | CPU Module | AS-Interface Master Module | AS-Interface Power Supply

Conventional Switch Wiring
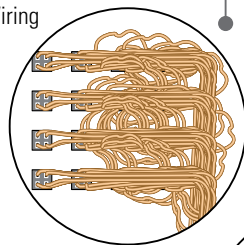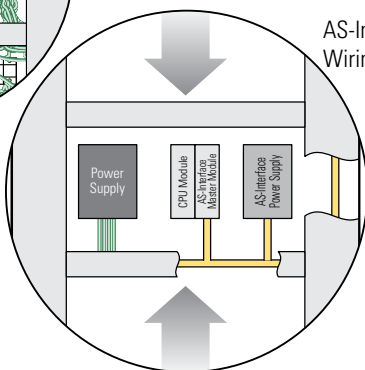
AS-Interface Switch Wiring

OI Touchscreens

PLCs

Automation Software

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Sidebar labels: OI Touchscreens | PLCs | Automation Software | Power Supplies | Sensors | **Communication** | Barriers
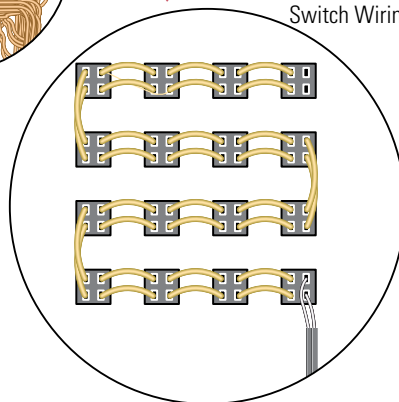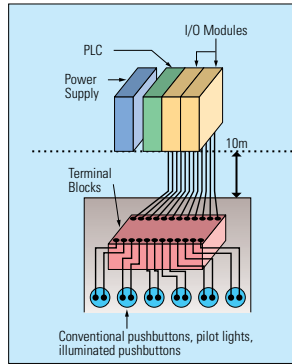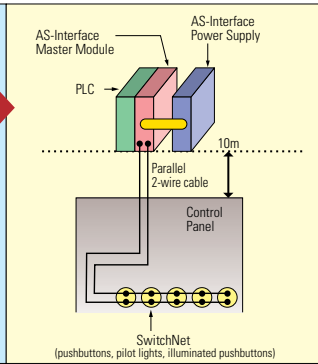
Cost Savings

Inside-Panel Wiring Example: Cost Savings Approximately 25%

Wiring Comparison

Conventional Wiring

AS-Interface & SwitchNet Wiring

PLC
Power Supply
I/O Modules
10m
Terminal Blocks
Conventional pushbuttons, pilot lights, illuminated pushbuttons

AS-Interface Master Module
AS-Interface Power Supply
PLC
10m
Parallel 2-wire cable
Control Panel
SwitchNet (pushbuttons, pilot lights, illuminated pushbuttons)

Conventional Wiring

When using conventional wiring that involves a PLC and terminal blocks, the inside of the control panel is filled with wires for switches, pilot lights and other devices. Approximately half of the total panel cost is attributable to labor costs for wiring.

AS-Interface & SwitchNet Wiring

All SwitchNet units are connected to the AS-Interface master module using 2-wire cables. Wiring time is reduced to approximately 1/4 of the time needed for the conventional method and the total cost can be reduced up to 40%. In addition, maintenance is much easier.
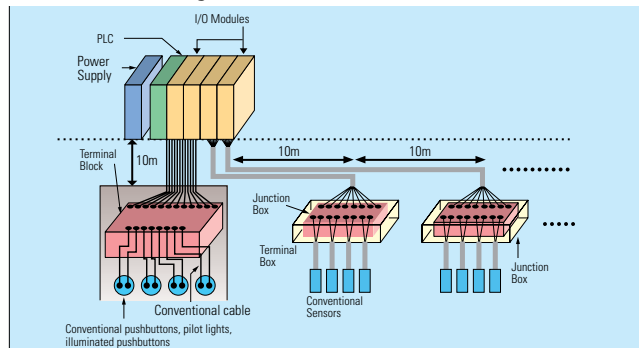
Cost Comparison

Conventional Wiring
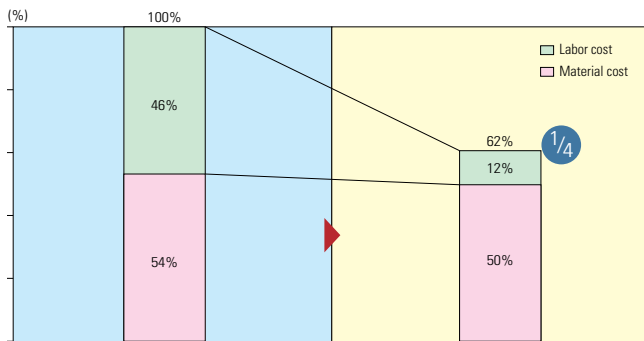
AS-Interface & SwitchNet Wiring

(%)
100%
Labor cost
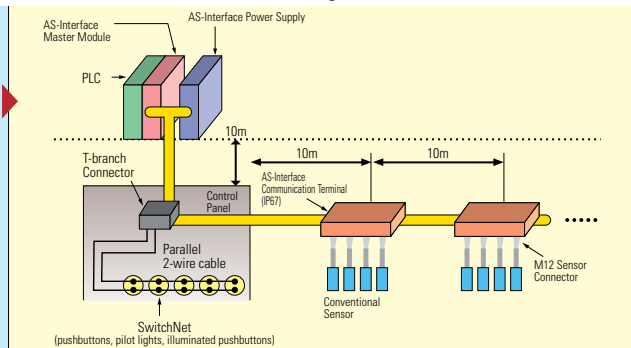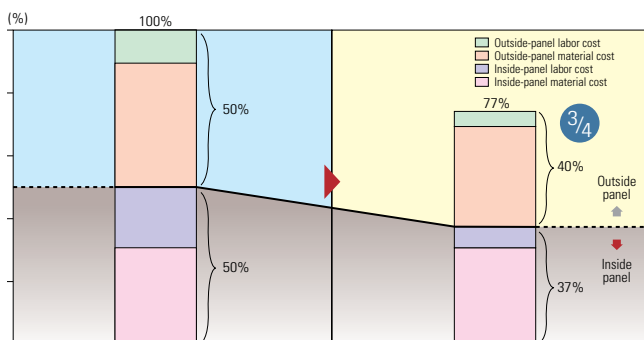Material cost
46%
54%
62%
12%
50%
1/4

1. Comparisons were made using IDEC products.
2. Cost comparison is based on control panel configuration using 60 buttons and lights.

Inside & Outside-Panel Wiring Example: Cost Savings Approximately 25%

Wiring Comparison

Conventional Wiring

AS-Interface & SwitchNet Wiring

PLC
Power Supply
I/O Modules
Terminal Block
10m
10m
10m
Junction Box
Terminal Box
Junction Box
Conventional cable
Conventional Sensors
Conventional pushbuttons, pilot lights, illuminated pushbuttons

AS-Interface Master Module
AS-Interface Power Supply
PLC
10m
10m
10m
T-branch Connector
Control Panel
AS-Interface Communication Terminal (IP67)
Parallel 2-wire cable
Conventional Sensor
M12 Sensor Connector
SwitchNet (pushbuttons, pilot lights, illuminated pushbuttons)

Cost Comparison

Conventional Wiring

AS-Interface & SwitchNet Wiring

(%)
100%
Outside-panel labor cost
Outside-panel material cost
Inside-panel labor cost
Inside-panel material cost
50%
50%
77%
40%
37%
3/4
Outside panel
Inside panel

Conventional Wiring

A large amount of space and cost is required by wiring to and inside junction boxes.

AS-Interface & SwitchNet Wiring

SwitchNet wiring reduces costs for inside-panel wiring resulting in a total cost reduction of approximately 25%.

1. Comparisons were made using IDEC products.
2. Cost comparison is based on control panel configuration using 60 buttons and lights.