, I/O

VDC(Venture Development Corporation)
"Global Markets and User Needs For
Industrial Distributed/Remote I/O"

DCS(distributed control systems), PC

PLC(programmable logic
controller)

,
I/O

VDC

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I/O

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I/O

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AB Remote I/O, AS-I, ControlNet,
DeviceNet, Ethernet(10 100 Mbps),
Firewire, Foundation Fieldbus, Genius Lan,
Hart, Honeywell DE, Interbus-S, LonWorks,
Modbus, Profibus(DP, FMS, PA), Seriplex,
(RS 232, 422, 485)

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VDC   (DCS, PC-
based   PLC   ) 1998

,
I/O   PROFIBUS-DP

2003

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Profibus-DP   PC-based

PLC

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Profibus-DP(Decentralized   Peripheral)
1987   ,   ,

Siemens   Profibus-DP
. Profibus-
DP

.

Profibus-DP   Profibus
Profibus-FMS(Field
Message System)   ,

Profibus-PA(Process Automation)
DP

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VDC   Profibus

AB Remote I/O ， I/O 1998

2 .

Rockwell Automation Allen-Bradley
PLC .

DeviceNet ControlNet
.

Ethernet(10 Mbps) / I/O
1998 3
2003 Profibus-
DP . Ethernet
2003 DCS
.

Ethernet DCS
I/O
.

DeviceNet ， I/O
1998 4
2003
3 .
DeviceNet CAN(Controlled Area
Network) Allen-
Bradley . DeviceNet 1994
，

Allen-Bradley 1995 ，
ControlNet
. ControlNet
， I/O
2003
5 .

Allen-Bradley DeviceNet ControlNet
Open
DeviceNet Vendor Association(ODVA)
ControlNet International Ltd
.

AB Remote
I/O Rockwell Automation Allen-
Bradley PLC
.

Foundation Fieldbus

， I/O 2003
4 DCS
2
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Foundation Fieldbus

. ISA 1980
SP50 Fieldbus
.

1992
Fisher-Rosemount, Yokogawa Siemens
Interoperable Systems
Project(ISP) Honeywell Allen-
Bradley WorldFIP
. 1993
Foundation Fieldbus .

ControlNet   I/O

20.4%

,   I/O   .   Rockwell Automation

Allen- Bradley

2   .   2003

. 1998   21.1%   .

19   21.5%   Siemens

Profibus   AS - I   1998   Ethernet(10   Mbps)   Fast

,   Ethernet(100 Mbps)   I/O

2003   3%   28   8.4%

.   , 2003   22%

Ethernet

1998   AB   Remote   I/O,   DeviceNet   ,   I/O

| A)		C) PLC	
1998	2003	1998	2003
1.Honeywell DE	1.Ethernet(10 Mbps)	1.Profibus DP	1.Profibus DP
2.Ethernet(10 Mbps)	2.Foundation Fieldbus	2.DeviceNet	2.DeviceNet
3.AB Remote I/O	3.Profibus DP	3.AB Remote I/O	3.Ethernet(10 Mbps)
4.Modbus	4.ControlNet	4.Genius Lan	4.ControlNet
4 - 45%	4 - 52%	4 - 59%	4 - 64%
B) PC		D) 3	
1998	2003	1998	2003
1.Profibus DP	1.Profibus DP	1.Profibus DP	1.Profibus DP
2.DeviceNet	2.Ethernet(10 Mbps)	2.AB Remote I/O	2.Ethernet(10 Mbps)
3.Ethernet(10 Mbps)	3.DeviceNet	3.Ethernet(10 Mbps)	3.DeviceNet
4.Genius Lan	4.Genius Lan Seriplex	4.DeviceNet	4.Foundation Fieldbus
4 - 47%	4 - 55%	4 - 43%	4 - 55%

,   I/O

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- GE Fanuc
- Mitsubishi Electric Automation
- Opto 22
- ABB Automation
- Sixnet
- Bristol Babcock
- Yamatake Industrial Systems
- Elsag Bailey Process Automation
- Yokogawa Electric
- Fisher-Rosemount

A) 1998   : 19

B) 2003   : 28

,   I/O

(,   )

2
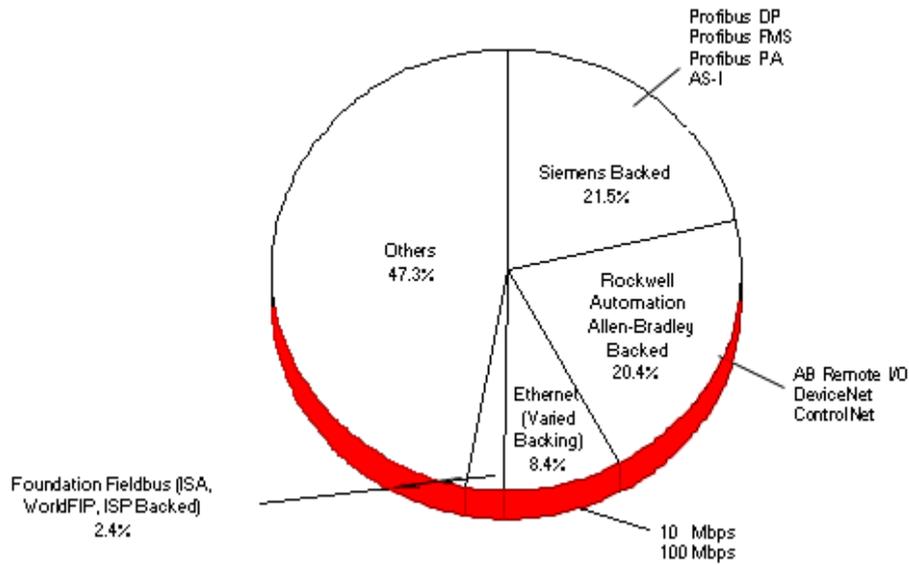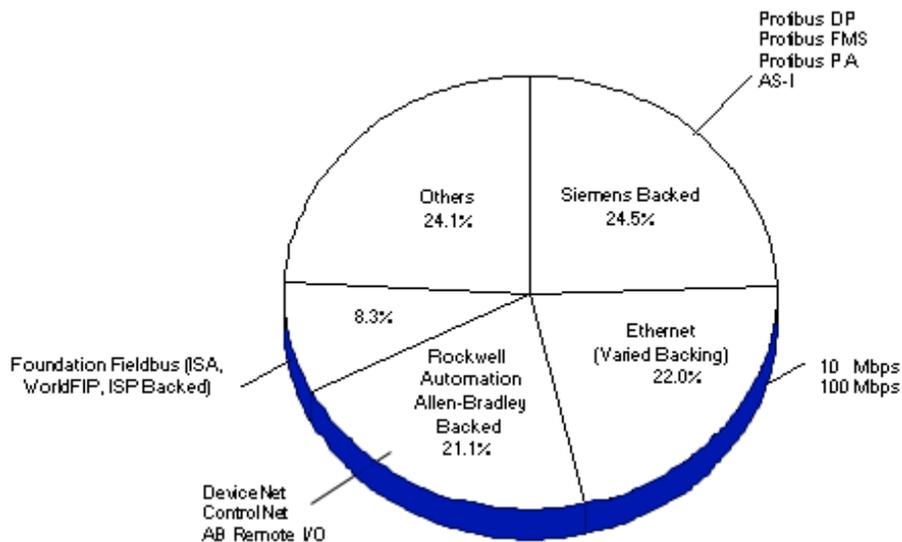
2 Foundation . 1998

Fieldbus(FF) , 2003

I/O 1998 .

2.4% 2003 8.3%

, , (, , ,

I/O FF), ,

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DIN , , ,

- ABB Automation),

- Elsag Bailey Process Automation

- Moore Products .

- Westinghouse Process Control .

- Yamatake Industrial Systems

- Yokogawa Electric .

(OEM/

5

, I/O bus)

Siemens .

Profibus, Rockwell Automation Allen-

Bradley ControlNet, Ethernet , I/O

, Foundation Fieldbus .

. 1998

/

, I/O 47% .

2003 24%

. , , I/O

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VDC "Global Markets and User

Needs For Industrial Distributed/Remote

I/O Products"

DCS, PC PLC , (,

, I/O), ,

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