● DOP-B Series HMI

Project Manager

Pere Roura

- Current products review
- New products introduction
- Ethernet solutions
- DVP series PLC with DOP-B series HMI

DOP-B Current Products

B05S101

- 5.6"
- 65,536 colors TFT
- 6MB Flash ROM
- 128k SRAM
- USB Client/Host
- RS-232/485/422
- No function keys design

B07S201

- 7"
- 65,536 colors TFT
- 2MB Flash ROM
- 256k SRAM
- USB Client/Host
- RS-232/485/422

B07S211

- 7"
- 65,536 colors TFT
- 2MB Flash ROM
- 256k SRAM
- USB Client/Host
- RS-232/485/422
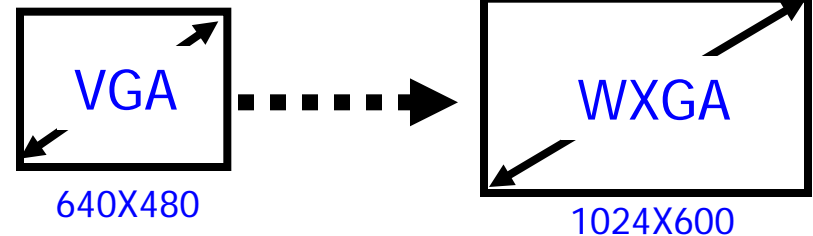- Flat panel design

New Products Introduction

DOP-B10

B10S615
Standard

B10E615
Ethernet

- 10.1" 65536 colors TFT
- WXGA (1,024 x 600)
- 128MB Flash ROM
  - 30MB for system
  - 82MB for user application
  - 16MB backup memory
- USB Host (v1.1)
- USB Client (v2.0 high-speed)
- RS-232/485/422
- SDHC Card
- *Ethernet (Ethernet Type)*
- *Audio (Ethernet Type)*

New Products

VGA → WXGA

640X480   1024X600
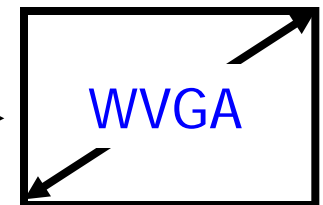
DOP-B07 (WVGA)

B07S415 *Standard*

B07E415 *Ethernet*

- 7" 65536 colors TFT
- WVGA (800 x 480)
- 128MB Flash ROM
  - 30MB for system
  - 82MB for user application
  - 16MB Backup memory
- USB Host (v1.1)
- USB Client (v2.0 high-speed)
- RS-232/485/422
- SDHC Card
- *Ethernet (Ethernet Type)*
- *Audio (Ethernet Type)*

New Products

WQVGA
480X234

WVGA
800X480

Comparison Table for B07

|	B07S201 B07S211	B07S415	B07E415
Resolution	480x234	**800x480**	**800x480**
Flash ROM	4 MB	**128 MB**	**128 MB**
SDRAM	16 MB	**64 MB**	**64 MB**
Function keys	8	**N/A**	**N/A**
SD card	N/A	**Yes**	**Yes**
USB Client	v1.1	**v2.0**	**v2.0**
Audio	N/A	**N/A**	**Yes**
Ethernet	N/A	**N/A**	**Yes**
Panel cutout	196.9 x 142.9mm	196.9 x 142.9mm	196.9 x 142.9mm

DOP-B08

B08S515 *Standard*

B08E515 *Ethernet*
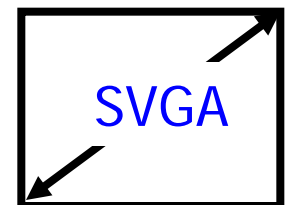
- 8" 65536 colors TFT
- SVGA (800 x 600)
- 128MB Flash ROM
  - 30MB for system
  - 82MB for user application
  - 16MB backup memory
- USB Host (v1.1)
- USB Client (v2.0 high-speed)
- RS-232/485/422
- SDHC Card
- *Ethernet (Ethernet Type)*
- *Audio (Ethernet Type)*

Jan., 2011

VGA
640X480

→
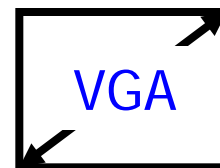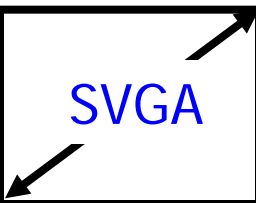
SVGA
800X600

DOP-B07 (SVGA)

B07S515
Standard

B07E515
Ethernet
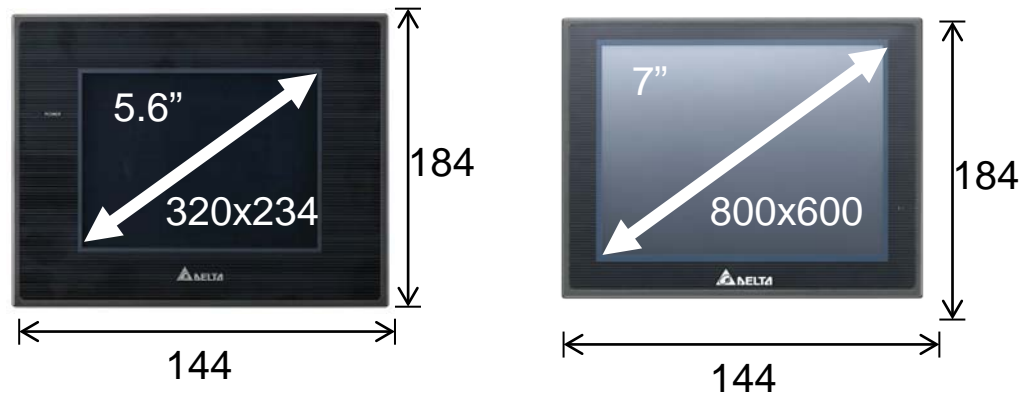
- 7" 65,536 colors TFT
- **5.6" panel cut-out**
- SVGA (800 x 600)
- 128MB Flash ROM
  - 30MB for system
  - 82MB for user application
  - 16MB backup memory
- USB Host (v1.1)
- USB Client (v2.0 high-speed)
- RS-232/485/422
- SDHC Card
- *Ethernet (Ethernet Type)*
- *Audio (Ethernet Type)*

QVGA
320X240

SVGA
800X600

Mar., 2011

Comparison Table

|	B05S101	B07S515	B07E515
Display size	5.6″	7″	7″
Resolution	320x234	**800x600**	**800x600**
Flash ROM	8 MB	**128 MB**	**128 MB**
SDRAM	16 MB	**64 MB**	**64 MB**
Function keys	8	**N/A**	**N/A**
SD card	N/A	**Yes**	**Yes**
USB Client	v1.1	**v2.0**	**v2.0**
Audio	N/A	**N/A**	**Yes**
Ethernet	N/A	**N/A**	**Yes**
Panel cutout	172.4 x 132.4mm	172.4 x 132.4mm	172.4 x 132.4mm

DOP-B12/B15

B12E715
Ethernet

B15E715
Ethernet

- 12″/15″ 65536 colors TFT
- XGA (1024 x 768)
- 128MB Flash ROM
  - 30MB for system
  - 82MB for user application
  - 16MB backup memory
- USB Host (v1.1)
- USB Client (v2.0 high-speed)
- RS-232/485/422
- SDHC Card
- *Ethernet (Ethernet Type)*
- *Audio (Ethernet Type)*
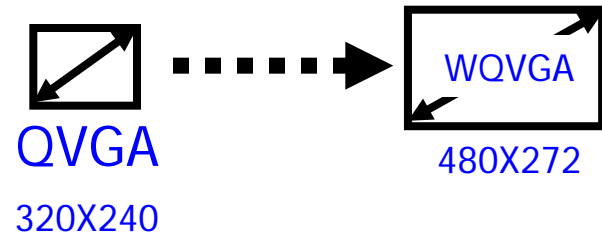
Jun., 2011

XGA
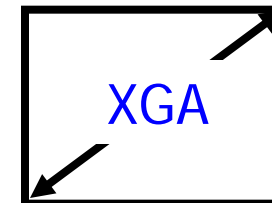
1024X768

DOP-B04

B04S211
Standard

- 4.7" 65,536 colors TFT
- WQVGA (480 x 272)
- 4MB Flash ROM
- USB Host (v1.1)
- USB Client (v1.1)
- 1 Serial port (RS-232/485/422)

Apr., 2011

QVGA
320X240

WQVGA
480X272

2011 DOP Products Line-Up

DOP-B
Wide
B04 B05 Wide B07 B08 Wide B10 B12 B15

DOP-AE
AE80 AE10

DOP-A
A80 A10

DOP-AS AS35T AS38B

3.5"   3.8"   5.7"   7"   8"   10.4"   12"   15"

High Resolution Displays

DOP-B

QVGA
320x240

WOVGA
480x234

VGA
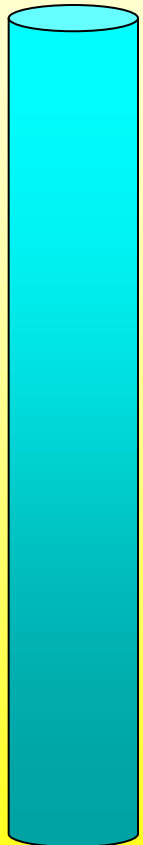640x480

WVGA
800x480

SGA
800x600
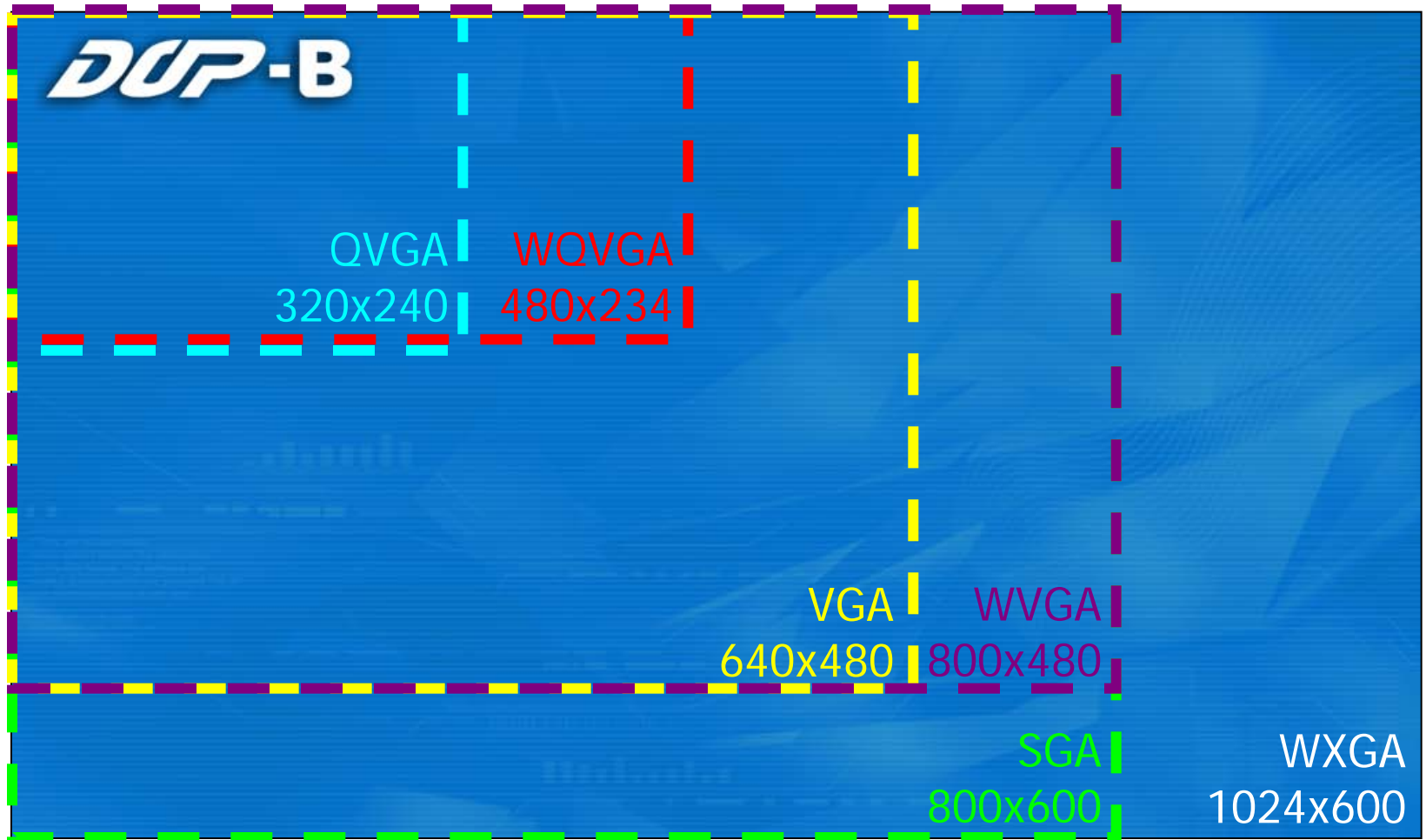
WXGA
1024x600

The latest 2D accelerator technology greatly enhances resolution to WXGA and enlarges the editing area to double the size (compared with VGA). You will be able to design more screen elements and create more colorful and attractive displays.
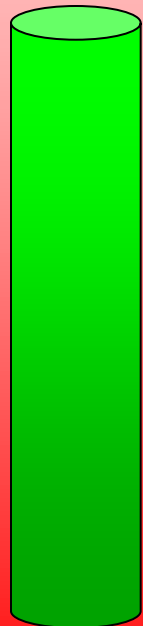
High Capacity Memory
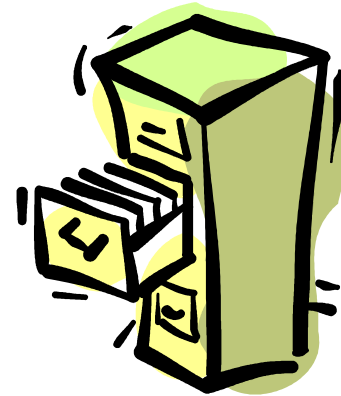
Flash ROM

82MB

6MB

Backup memory

16MB

512k
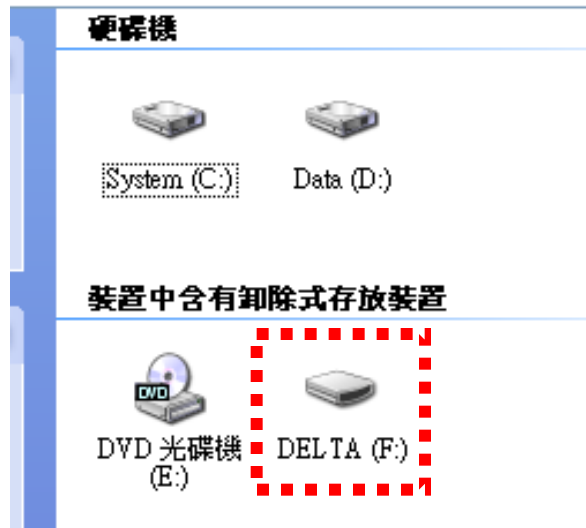
The new DOP-B series HMI features high-capacity memory capable of storing more images and collecting more historical data.
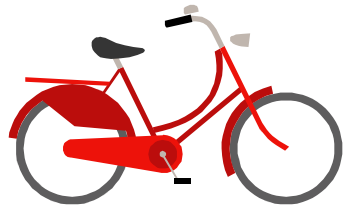
New USB Transfer Mode

Compatible with Windows Vista/Windows 7
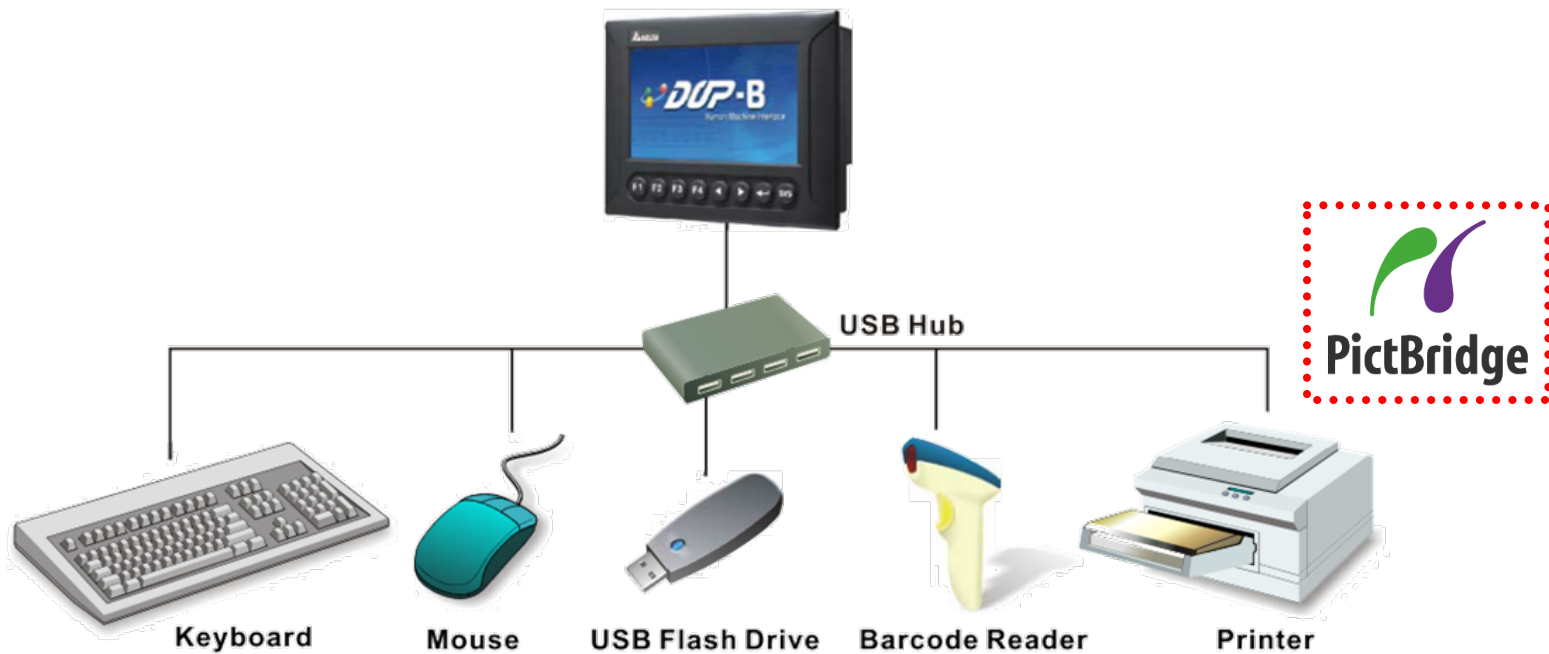

USB High-speed Transfer

USB v1.1 12Mbs

USB v2.0 480Mbs

USB Devices

- Various USD devices can be connected via the USB Hub
  - Keyboards, mouses
  - USB Flash drives
  - Barcode readers
  - Printers, and *PictBridge compatible* printers

SD Card/USB Flash Drive (1)

- Convenience of SD/USB flash drive: Quick screen data transfer and collection and expanded HMI storage capacities. No need to worry about excessive historic and recipe data.
  - Recipe data are saved in CSV format and easily edited on an external PC using Excel files, which saves PLC memory.
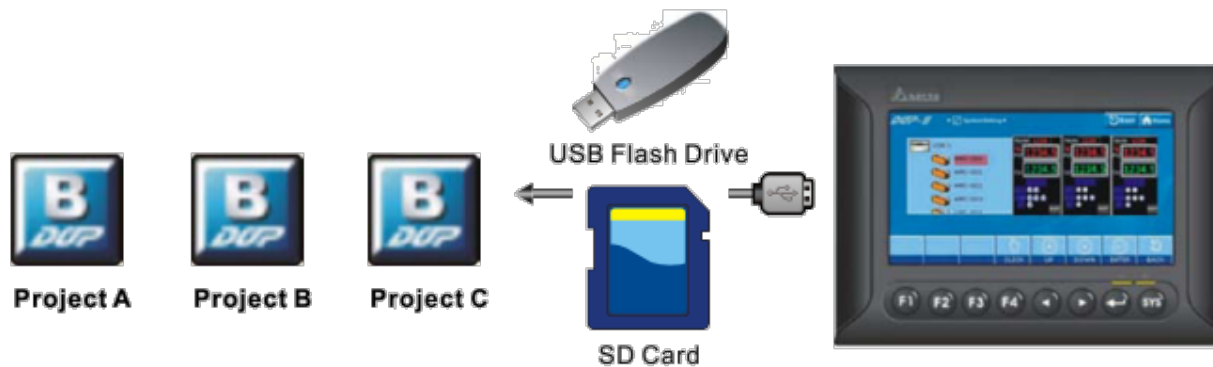

USB Flash Drive

Recipe

SD Card

SD Card/USB Flash Drive (2)

- History and alarm information can be saved in CSV format and stored on a USB flash drive.

- Much project screen data can be saved on the USB flash drive simultaneously and transferred to the HMI.
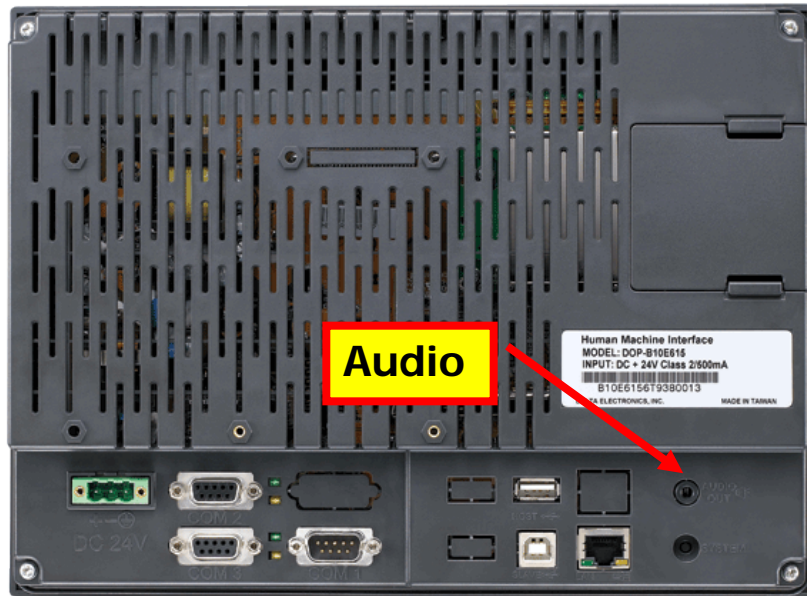
File Encryption

- "File Encryption" is a new function which allows users to encrypt screen data. To protect screen data in a safer and more flexible way, you can use this new function to set up the copy times of the screen data.

Audio Output (1)

- Supports MP3/WAV files for alarms
- Supports 3.5mm socket

Audio

Human Machine Interface
MODEL: DOP-B10E615
INPUT: DC + 24V Class 2/500mA
B10E615GT9380013
TA ELECTRONICS, INC.   MADE IN TAIWAN

Applications:
Alarm notifications
Audio operation instructions

Alarm!
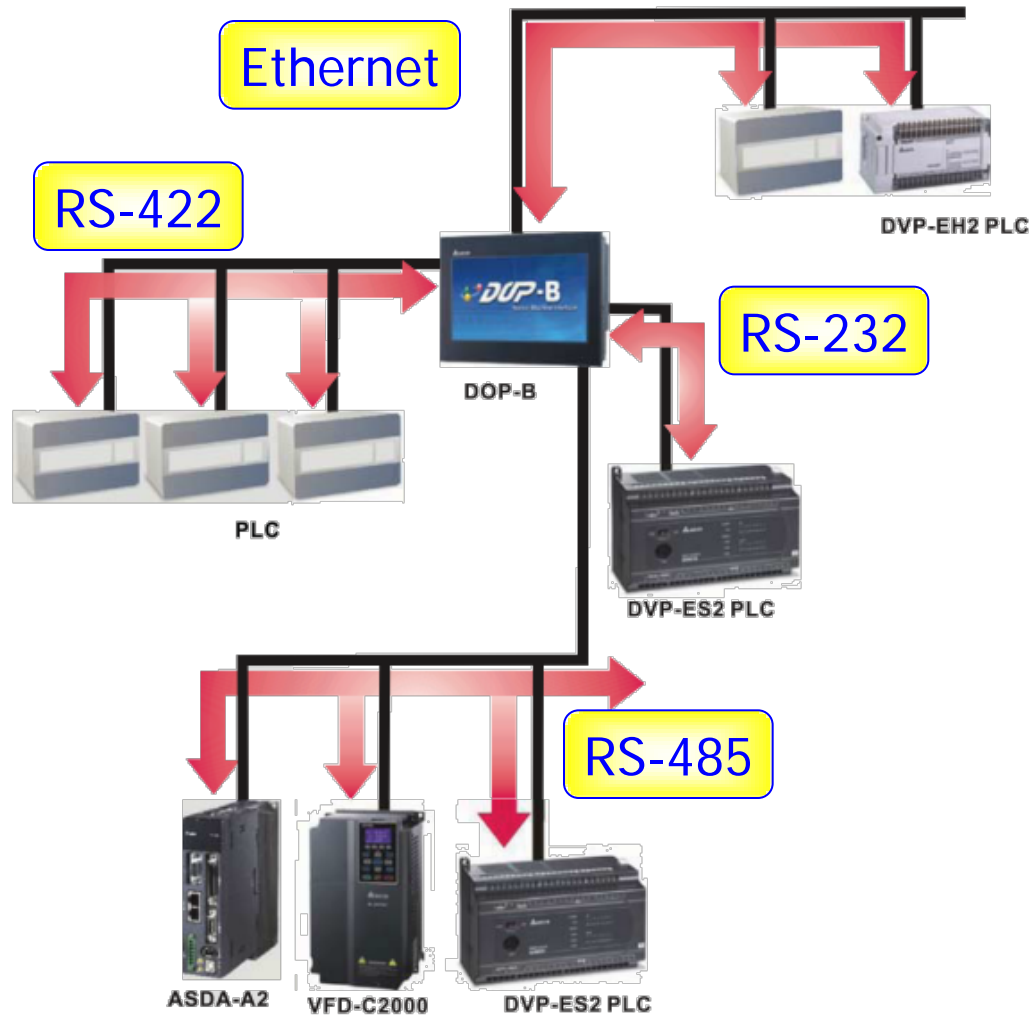
Alarm broadcast is triggered by the corresponding bit. The alarm messages can be played and output in different sound files through set values in the word registers.

D100	Sound Files	Audio Messages
1	A.wav	Overcurrent
2	B.wav	Overvoltage
3	C.wav	Overload

Communication

Ethernet

RS-422

RS-232

RS-485

DVP-EH2 PLC

DOP-B

PLC

DVP-ES2 PLC

ASDA-A2   VFD-C2000   DVP-ES2 PLC

Supports RS-232/RS-485/RS-422/Ethernet
The 4 communication interfaces can be used at the same time!
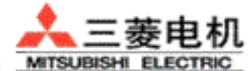
Drivers Supported

- The DOP Series supports not only Delta's industrial automation products (frequency inverters, servos, temperature controllers and PLCs) but also PLCs of other brands, such as Mitsubishi, Siemens, Omron, and more.
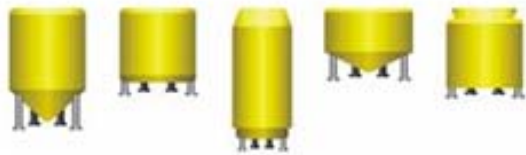

- New drivers supported
  - Siemens S7-300 Direct MPI
  - Siemens S7-1200
  - Mitsubishi FX3U/3G, QnU, QnUDE (built-in Ethernet)
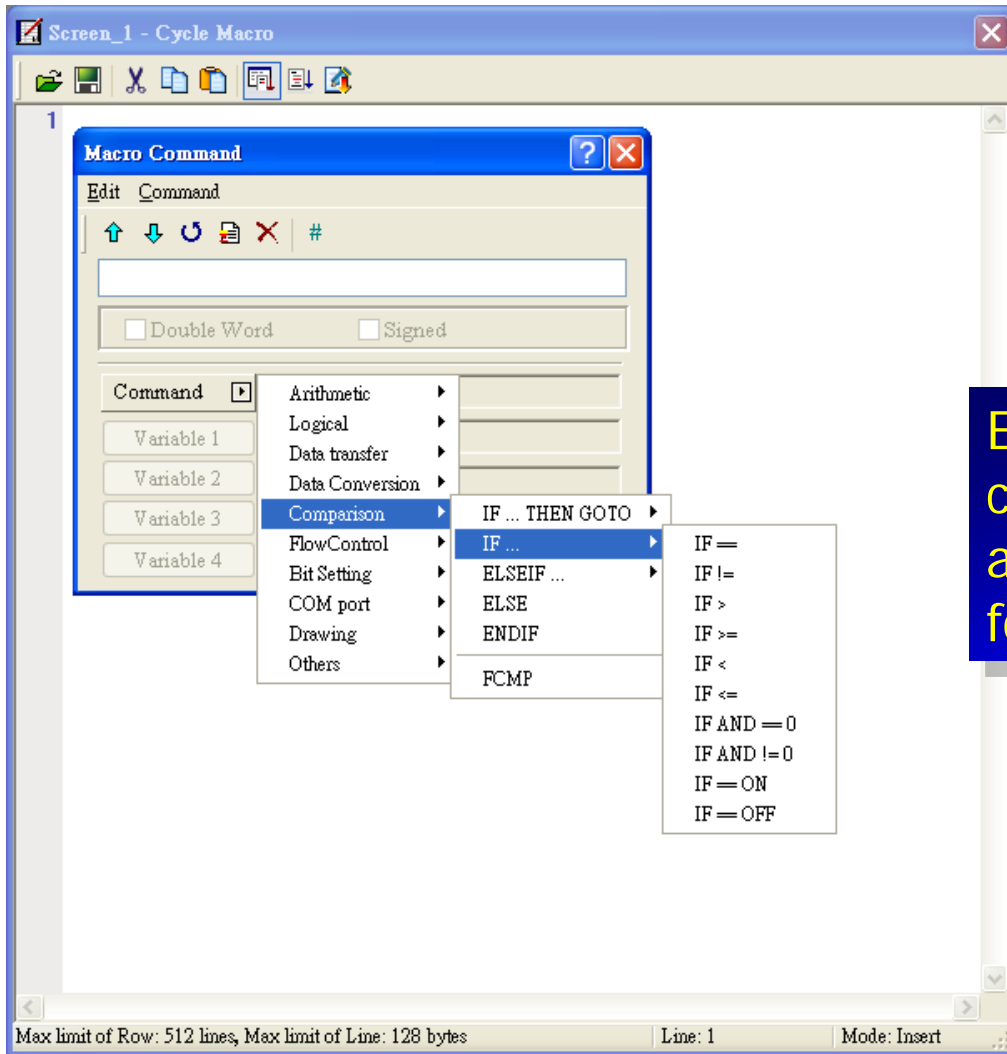 - Allen-Bradley EtherNet/IP

The new picture bank offers even more colorful and useful elements!

Multilingual Displays

- Max. 16 user-defined languages can be displayed on the HMI

Macro Commands

Easy-to-learn macro commands provide flexibility and can reduce editing tasks for PLC programs.

Alarm

- Supports 2,048 alarm messages
- Supports alarm sub-windows
- Supports alarm moving-signs

Screen Data Conversion

- Convenient screen data conversion
  - Project files created by Screen Editor 1.05 can be opened with Screen Editor 2.00.

DOP-A   DOP-B

  - It's easy to upgrade and convert projects from DOP-A to DOP-B.

B05   B10

Ethernet Download

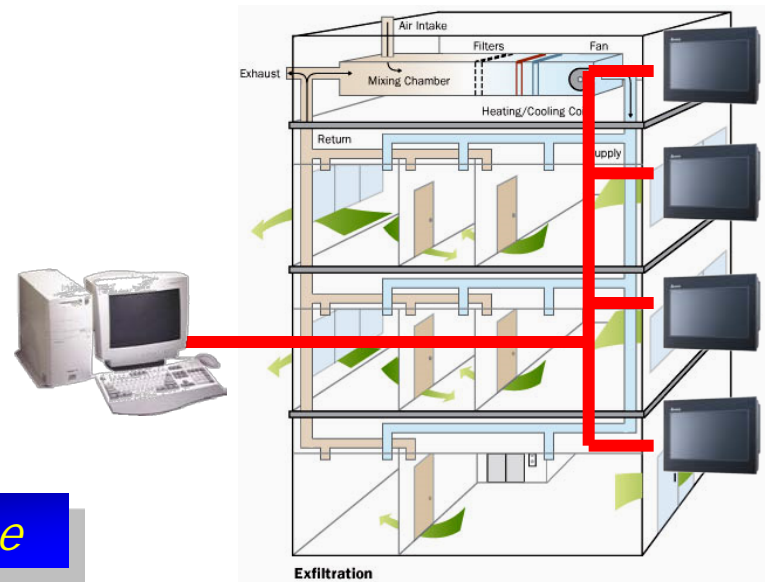Easy to maintain and upgrade programs no matter where you are in the world.

Destination

Static IP   211 . 23 . 203 . 2   :   21

☑ Auto Seach   Refresh

HMI	Model type	Source IP Ad...	Port
HMI-[A]	DOP-B10E615	172.16.190.71	12346
HMI-[B]	DOP-AE10TH...	172.16.190.88	12346

Start

User-defined HMI name

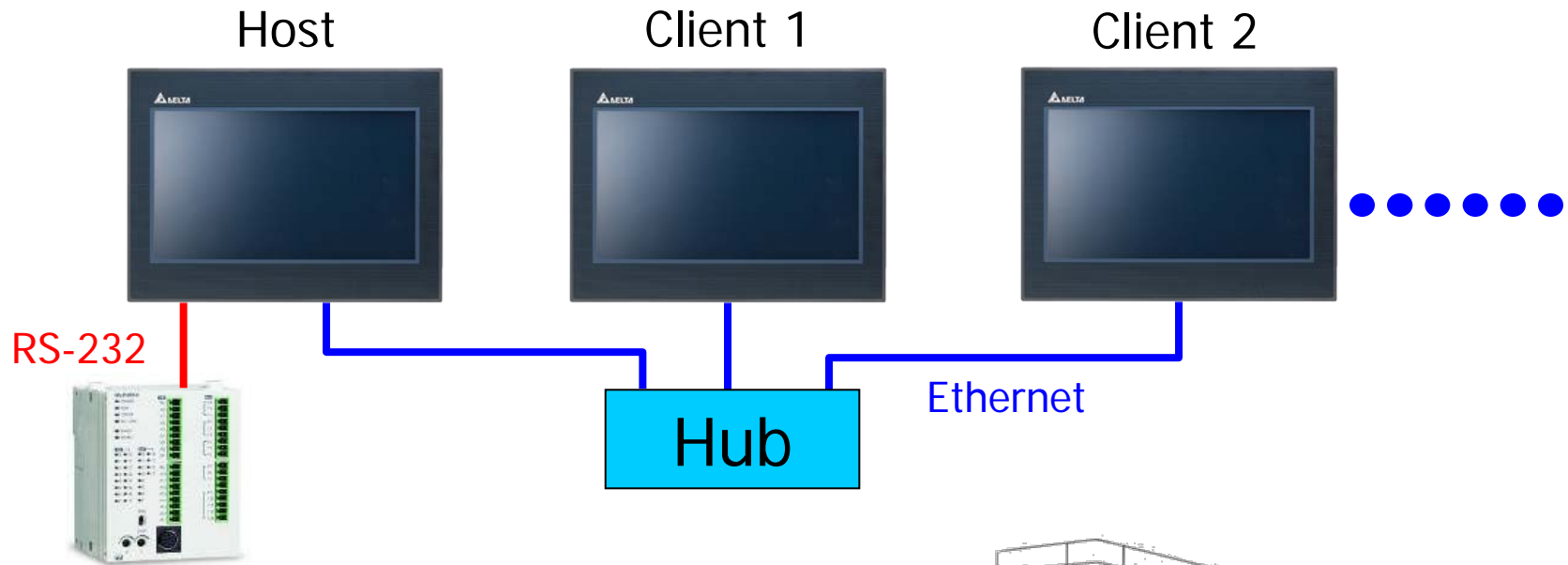# Delta Ethernet Solutions
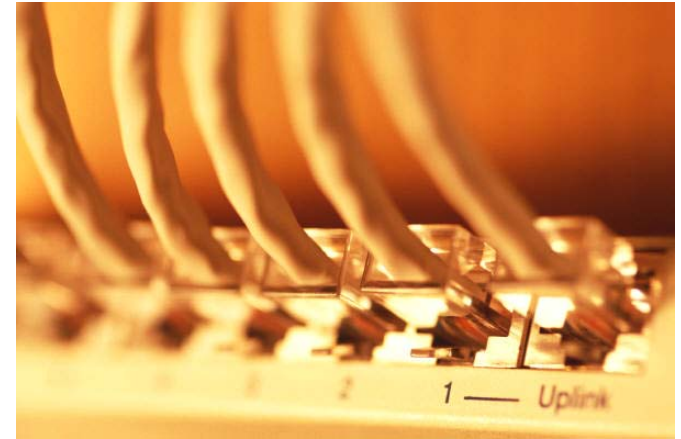
Delta's DOP series **E**thernet solutions make your systems more **E**fficient, **E**nvironmentally-friendly and **E**xcellent.

Ethernet Multi-Link

- Multi-Link allows you to connect multiple display units to a single external device via Ethernet communication
  - Supports N:1/N:N communications

Host　　　　　Client 1　　　　　Client 2

RS-232

Ethernet

Hub

- Applications: printing machines

eServer & eRemote

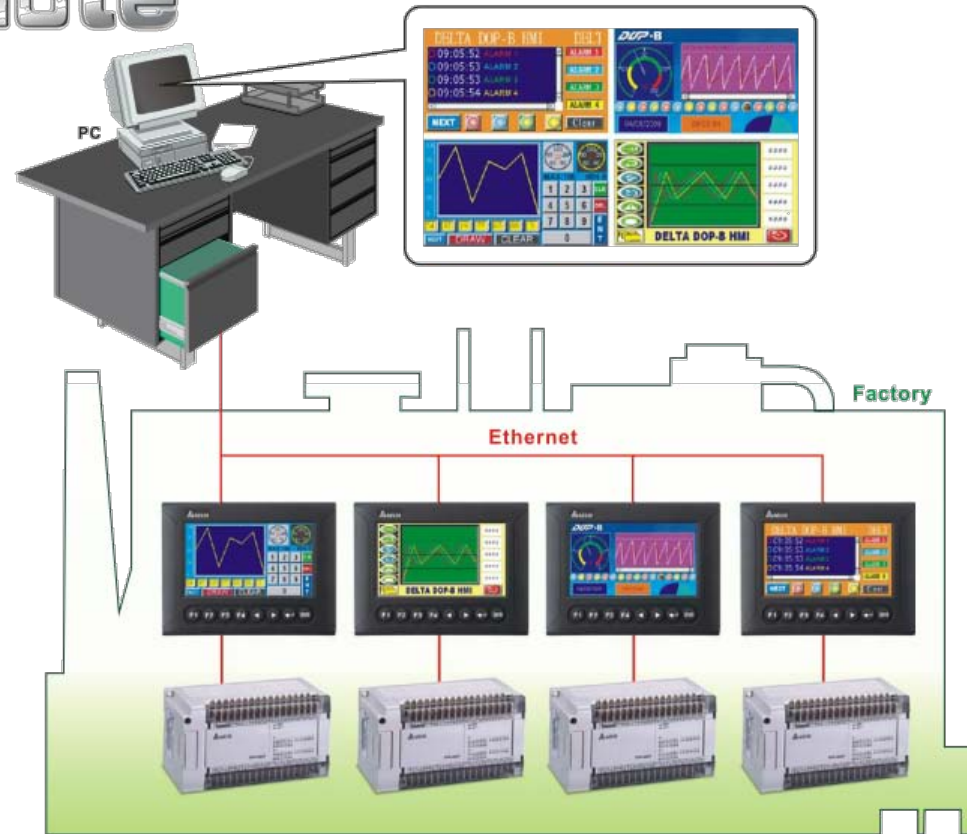**DOP-eRemote**

DOP-eServer

Remote Control

eRemote is used to view and check the HMI screen at the production site and to control the manufacturing process via the Ethernet.
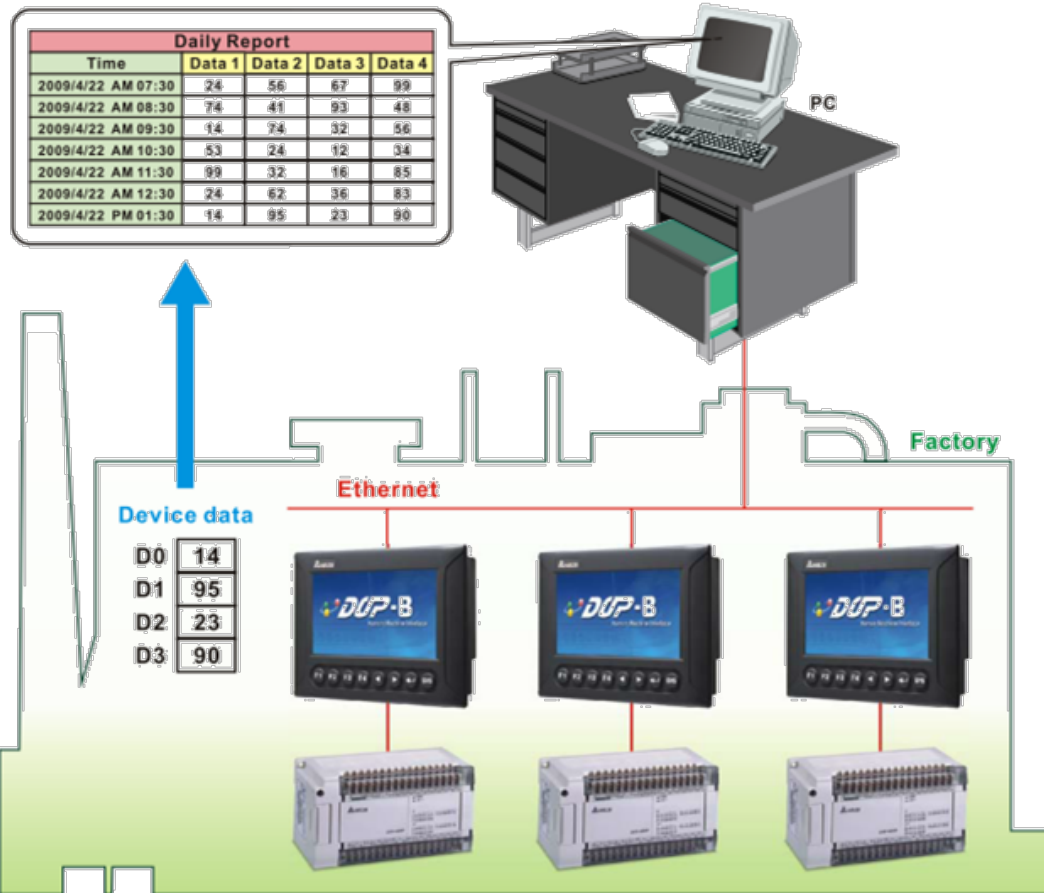
Data Collection (1)

- eServer is used to transfer production and history data from the production site to a PC in the office via the Ethernet.

- Production data can be saved in daily reports or weekly reports automatically under different settings.

- Applications:
  - FA: Used to calculate defect rates, average working hours and capacity utilization rates...
  - BA: Used to record the data of air-conditioner operation and monitor the calculation of power consumption.
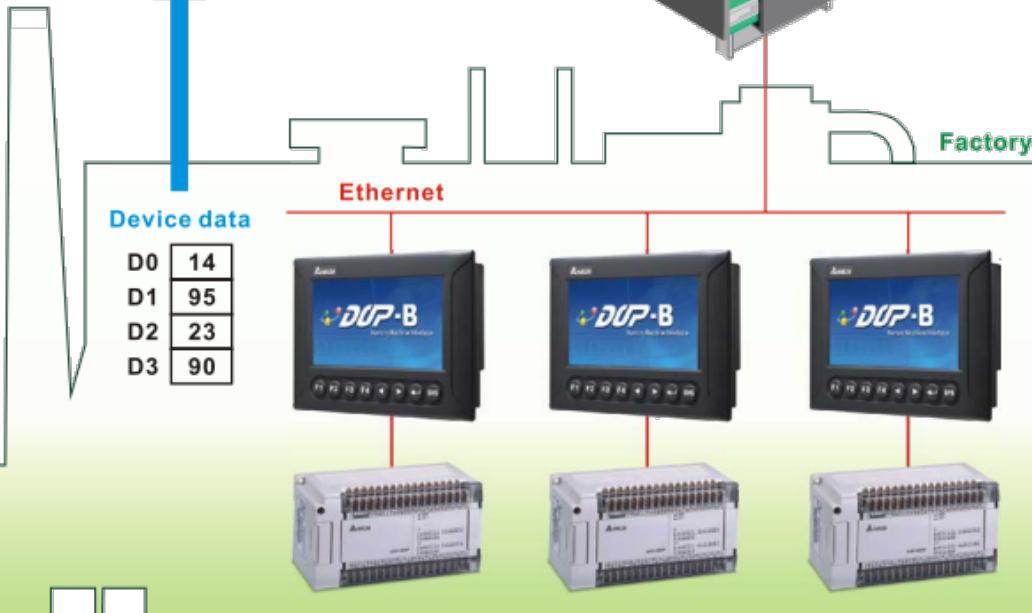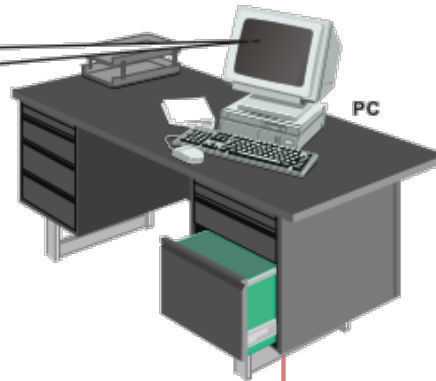
- Excel 2000 / 2003 / 2007 / 2010
- The collected data are saved in user-defined Excel files of different purposes for you to easily create a production report.

Data Collection (3)

Will be released soon!

Database

Time	Data1	Data2
08/26/2009 13:24:51	52	52
08/26/2009 13:24:52	61	61
08/26/2009 13:24:53	71	71
08/26/2009 13:24:54	81	81
08/26/2009 13:24:55	90	91
08/26/2009 13:24:56	65436	0
08/26/2009 13:24:57	65446	10
08/26/2009 13:24:58	65456	20
08/26/2009 13:24:59	65466	30
08/26/2009 13:25:00	65475	39
08/26/2009 13:25:01	65484	48
08/26/2009 13:25:02	65494	58

PC

Factory

Ethernet

Device data

D0	14
D1	95
D2	23
D3	90

DUP eServer

Microsoft

Microsoft Office Access 2003

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MySQL

ORACLE®

The collected data can be saved in Database via the ODBC interface.

Perfect Connections to DVP Series PLC

DirectLink

- Use the DirectLink function to monitor and modify the PLC program through a USB cable.

- Operate the HMI and monitor the PLC at the same time!

PLC Ladder Transfer

- A PLC ladder can be transferred and backed up via SD cards or USB flash drives.

- Even at a location where an external PC is not available!

- SD cards/USB flash drives are capable of storing many PLC ladders.

Ladder Transfer

USB Flash Drive

PLC Ladder Diagrams

SD Card

Support Delta DVP series PLC only.

Q & A