Programming for *Direct*LOGIC PLCs

Programming versions

With *Direct*SOFT6 Programming Software, selecting which software package you need is a snap! You can select the fully loaded package at its great low price, or you may choose the FREE package. It has all of the same programming functions as the full package. However, it will only download a program up to 100 words long.

The fully-loaded version (PC-DSOFT6) will program all of our *Direct*LOGIC PLCs, some GE Series One Plus PLCs, and TI305/405 SIMATIC PLCs. Refer to the chart below to verify compatibility.

The FREE *Direct*SOFT6 package (PC-DS100) was designed to provide a more streamlined choice. You can see from the table below that the FREE version has the same support and same great features, but will only allow you to open or download a program up to 100 words long.

Also, you cannot open an offline project larger than 100 words. You can create a project as large as you want and save it to disk, but you cannot reopen or download it to a PLC without purchasing the full version (PC-DSOFT6).

PLC compatibility

If you're using our *Direct*LOGIC products, then compatibility is not an issue. The *Direct*SOFT6 package supports all *Direct*LOGIC CPUs. Our software also supports many compatible products that were offered by previous vendors of the Koyo-designed PLCs. If you're buying the software to program a compatible CPU, check the following table to make sure your CPU is supported. (Sorry, but if your CPU is not shown, then it is not supported.)

Family	CPU	*Direct*SOFT6 (full version) PC-DSOFT6	*Direct*SOFT6 (free version) PC-DS100*	CPU Firmware Version Needed to Use IBox Instructions
DL05	All	✔	✔	✔ CPU v5.10 or Later
DL06	All	✔	✔	✔ CPU v2.10 or Later
DL105	All	✔	✔	
DL205	D2-230	✔	✔	
	D2-240	✔	✔	
	D2-250	✔	✔	
	D2-250-1	✔	✔	✔ CPU v4.60 or Later
	D2-260	✔	✔	✔ CPU v2.40 or Later
DL305	D3-330**, D3-330P**	✔	✔	
	D3-340	✔	✔	
	D3-350	✔	✔	
DL405	D4-430	✔	✔	
	D4-440	✔	✔	
	D4-450	✔	✔	✔ CPU v3.30 or Later
	D4-454	✔	✔	
GE® Series 1 PLUS	IC610CPU105**	✔	✔	
	IC610CPU106**	✔	✔	
TI305™/ SIMATIC® TI305™	325-07**, PPX:325-07**	✔	✔	
	330-37**, PPX:330-37**	✔	✔	
	325S-07** (or 325 with Stage Kit)	✔	✔	
	330S-37**, PPX:330S-37**	✔	✔	
	335-37, PPX:335-37	✔	✔	
TI405™/ SIMATIC® TI405™	425-CPU, PPX:425-CPU	✔	✔	
	PPX:430-CPU	✔	✔	
	435-CPU, PPX:435-CPU	✔	✔	
Koyo Kostac S-Series	PZ1	✔	✔	
	PZ2	✔	✔	
	PZ3	✔	✔	
	SC-4X	✔	✔	
	SG-8/8B	✔	✔	
	SL-4	✔	✔	
	SU-5/5E/5M	✔	✔	
	SU-6/6B/6H/6M	✔	✔	
	SZ-3	✔	✔	
	SZ-4/4M	✔	✔	
	TJ-435/435-AS	✔	✔	

* PC-DS100 is only available by download from our Website. This FREE, full-featured software package will download a program limited to 100 words.
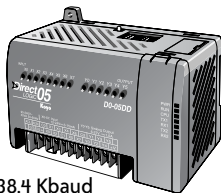
** Requires Data Communications Unit (D3-232-DCU).

Programming for *Direct*LOGIC PLCs

Connecting to *Direct*LOGIC PLCs

*Direct*SOFT**6**®

DL05 CPUs
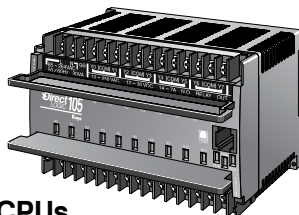Port 1: 9.6 Kbaud
Port 2: 300 baud-38.4 Kbaud

DL06 CPUs
Port 1: 9.6 Kbaud
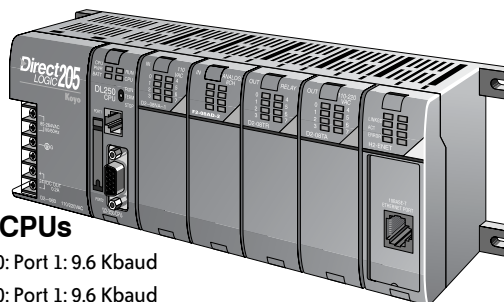Port 2: 300 baud - 38.4K baud

DL105 CPUs
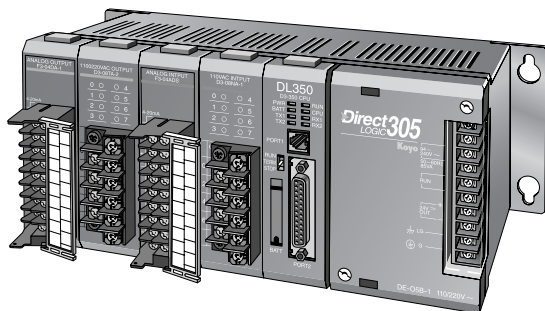Port 1: 9.6 Kbaud

DL205 CPUs

D2-230: Port 1: 9.6 Kbaud

D2-240: Port 1: 9.6 Kbaud
           Port 2: 300 baud - 19.2 Kbaud

D2-250-1: Port 1: 9.6 Kbaud
& D2-260 Port 2: 300 baud - 38.4 Kbaud

DL305 CPUs

D3-330 (requires D3-232-DCU): 300 - 19.2 Kbaud

D3-340: Port 1/2: 300 baud - 38.4 Kbaud

D3-350: Port 1: 9.6 Kbaud
           Port 2: 300 baud - 38.4 Kbaud

DL405 CPUs

D4-430: Port 1: 9.6 Kbaud
&D4-440: Port 2: 300 baud - 19.2 Kbaud

D4-450: Port 0: 9.6 Kbaud
           Port 1/3: 300 baud - 38.4 Kbaud
           Port 2: 300 baud - 38.4 Kbaud

D4-454: Port 0: 9.6 Kbaud
           Port 1/3: 2.4 Kbaud - 38.4 Kbaud
           Port 2: 2.4 Kbaud - 38.4 Kbaud
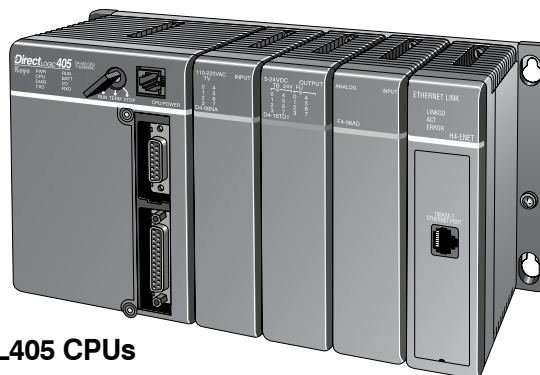
**Or use an Hx-ECOM100 module in the DL05, DL06, DL205 (except D2-230) or
DL405 local base to program over a high-speed Ethernet link.**

*Direct*LOGIC PLC Programming Cables

Since CPUs provide many different communication port possibilities, it is helpful to know exactly which communications cable is required. Use the table below to choose the proper cable:

Family	CPU (or other device)	Port	Cable
DirectLOGIC DL05	All versions	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
		Port 2	D2-DSCBL (EA-MG-PGM-CBL optional)
	H0-ECOM / ECOM100 (modules)	Only one	**
	D0-DCM (module)	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
		Port 2	D2-DSCBL-1
DirectLOGIC DL06	All versions	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
		Port 2	D2-DSCBL-1
	H0-ECOM / ECOM100 (modules)	Only one	**
	D0-DCM (module)	Port 1	D2-DSCBL (EA-MG-PGM-CBL optional)
		Port 2	D2-DSCBL-1
DirectLOGIC DL105	F1-130 (all versions)	Only one	D2-DSCBL (EA-MG-PGM-CBL optional)
DirectLOGIC DL205	D2-230	Only one	D2-DSCBL (EA-MG-PGM-CBL optional)
	D2-240	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D2-DSCBL (EA-MG-PGM-CBL optional)
	D2-250(-1)	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D2-DSCBL-1
	D2-260	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D2-DSCBL-1
	D2-DCM (module)	Only one	D3-DSCBL-2
	H2-ECOM (-F) / ECOM100	Only one	**
DirectLOGIC DL305	D3-330/D3-330P	Requires DCU*	D3-DSCBL-2
	D3-340	Top port	D3-DSCBL-1
		Bottom port	D3-DSCBL-1
	D3-350	Top port	D2-DSCBL (EA-MG-PGM-CBL optional)
		Bottom port	D3-DSCBL-2
	D3-DCM (module)	Only one	D3-DSCBL-2
DirectLOGIC DL405	D4-430/D4-440	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-450	Phone jack	D2-DSCBL (EA-MG-PGM-CBL optional)
		Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-454	Phone jack	D2-DSCBL (EA-MG-PGM-CBL optional)
		Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	D4-DCM (module)	Only one	D3-DSCBL-2
	H4-ECOM (-F) / ECOM100	Only one	**
	Slice I/O (module)	Only one	D4-DSCBL
GE® Series 1	IC610CPU105/106	Requires DCU*	D3-DSCBL-2
TI305™/SIMATIC® TI305™	325-07, PPX:325-07	Requires DCU*	D3-DSCBL-2
	330-37, PPX:330-37	Requires DCU*	D3-DSCBL-2
	325S-07 (or 325 with stage kit)	Requires DCU*	D3-DSCBL-2
	330S-37, PPX:330S-37	Requires DCU*	D3-DSCBL-2
	335-37, PPX:335-37	Phone jack	D3-DSCBL-1
		If DCU is used*	D3-DSCBL-2
TI405™/SIMATIC® TI405™	425-CPU, PPX:425-CPU	If DCU is used*	D4-DSCBL
	N/A, PPX:430-CPU	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	435-CPU, PPX:435-CPU	Top port (15-pin)	D4-DSCBL
		Bottom port (25-pin)	D3-DSCBL-2
	Smart slice	Only one	D4-DSCBL

*** Requires RS232 Data Communications Unit (D3-232-DCU).**
****Requires standard Ethernet twisted pair cable (HX-ECOM) or standard fiber optic cable (HX-ECOM-F).**
*****The GoldX USB-RS232 adapter is another option for USB communication.**
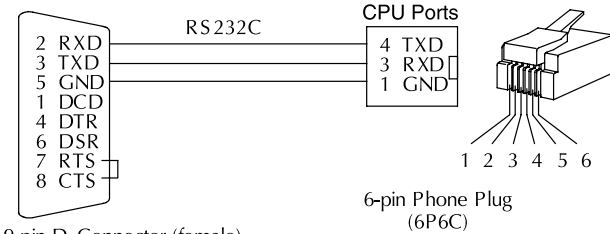
*Direct*LOGIC PLC Programming Cables

Pin labeling conforms to IBM DTE and DCE standards
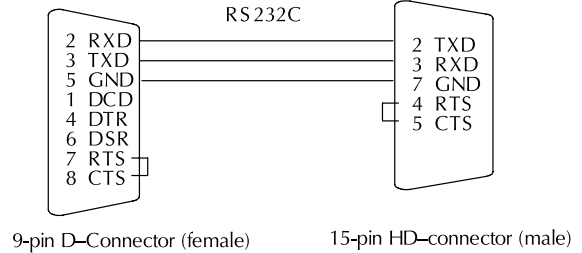
D2-DSCBL $18.00

Personal Computer

RS232C

DL05, DL06, DL105
DL205, D3-350, D4-450
CPU Ports

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

4	TXD
3	RXD
1	GND

1 2 3 4 5 6

9-pin D–Connector (female)

6-pin Phone Plug
(6P6C)

D2-DSCBL-1 $31.50

Personal Computer

RS232C

DL06, D2-250
(bottom port)

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

2	TXD
3	RXD
7	GND
4	RTS
5	CTS

9-pin D–Connector (female)

15-pin HD–connector (male)

D3-DSCBL-1 $31.50

Personal Computer

RS232C

PLC DL340
CPU Ports

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

2	TXD
1	RXD
4	GND

1 2 3 4

9-pin D–Connector (female)

4-pin Phone Plug
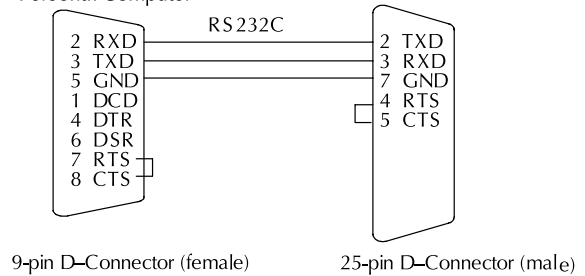(4P4C)
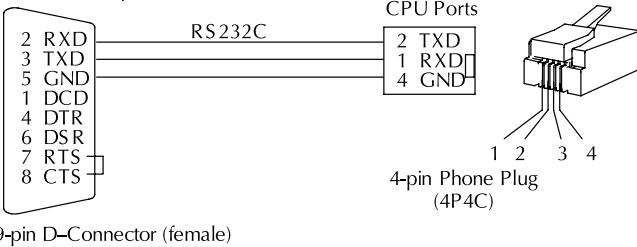
D3-DSCBL-2 $31.50

D3-350 (bottom port)
or
DL405 CPU (bottom port)
or
DL205/405 DCM
or
DL305 w/DCU
RS-232

D3–DSCBL–2

Personal Computer

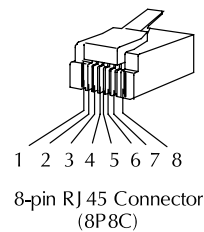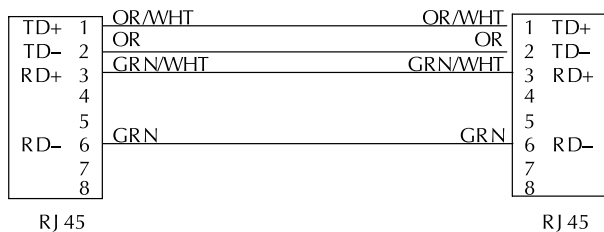RS232C

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

2	TXD
3	RXD
7	GND
4	RTS
5	CTS

9-pin D–Connector (female)

25-pin D–Connector (male)

D4-DSCBL $31.50

Personal Computer

RS232C

DL405 CPU
DL405 Slice I/O
programming port

2	RXD
3	TXD
5	GND
1	DCD
4	DTR
6	DSR
7	RTS
8	CTS

1	YOP
2	TXD
3	RXD
4	ONLINE
7	CTS
8	YOM
13	0V
14	0V
15	0V

9-pin D–Connector (female)

15-pin D–Connector (male)
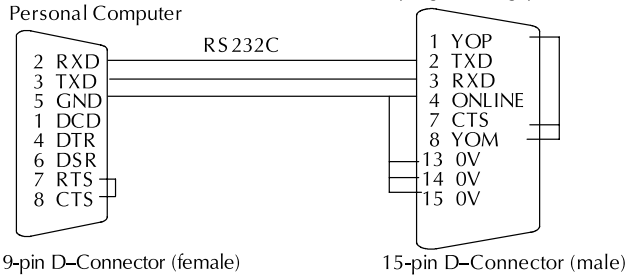
Straight-through Patch Cable (Ethernet)

TD+	1	OR/WHT	OR/WHT	1	TD+
TD–	2	OR	OR	2	TD–
RD+	3	GRN/WHT	GRN/WHT	3	RD+
	4			4	
	5			5	
RD–	6	GRN	GRN	6	RD–
	7			7	
	8			8	

RJ45

RJ45

1 2 3 4 5 6 7 8

8-pin RJ45 Connector
(8P8C)

Crossover Cable (Ethernet)

TD+	1	OR/WHT	GRN/WHT	TD+	1
TD–	2	OR	GRN	TD–	2
RD+	3	GRN/WHT	OR/WHT	RD+	3
	4				4
	5				5
RD–	6	GRN	OR	RD–	6
	7				7
	8				8
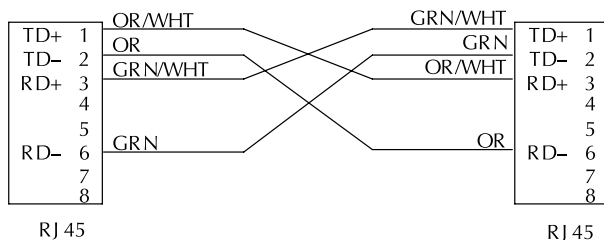
RJ45

RJ45

All Ethernet and ECOM patch cables should be Category 5,
UTP Cable. The diagram illustrates the appropriate wire
position in the RJ45 connector.