



IDEC FT1A SmartAXIS Value. Versatility. The New Breed of Controllers.

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Design-in More Function with Affordable FT1A PLCs

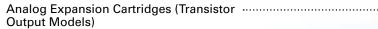


A Breed of Its Own

The perfect combination of PLC processing and HMI monitoring and control, the 3.8-inch FT1A Touch is an all-in-one touchscreen interface and logic controller. With a compact body and full complement of features, FT1A Touch is perfect for small systems that require a graphical user interface along with versatile I/O controls at a truly affordable price.

USB-A Port ·····

Embedded USB-A port for data logging and recipe data, as well as for performing program updates.



- Up to 2 analog expansion adapters can be configured on the FT1A Touch with 12-bit resolution.
- Maximum combination of 2in/6out, 4in/4out, or 6in/2out analog I/O can be configured.

RS232C and RS485 ports

- Built-in RS232C, RS422/485 interface for serial communication.
- Communication with IDEC or other PLCs also supported through this serial port.

Relay or Transistor Outputs.....

- Relay output type equipped with 10A contact, so no interposing relays required.
- Transistor output type equipped with 300mA per channel.

Analog Outputs (Transistor Output Models)

2 built-in 0-10VDC, 4-20mA analog outputs.

Digital, Analog and High-speed Inputs

8 built-in DC inputs

- 2 inputs (I6 and I7) can be configured as 0-10V DC analog inputs or 4-20mA analog inputs (transistor output models)

 10-bit resolution
- 4 high-speed counters
 - Up to 10kHz

Harsh Enviroments

- Class I, Division 2 for hazardous locations
- -20 to 55°C operating temperature (color models)

Control Functions

Fast Processing Speed

Basic instructions can be processed in 1850µs per 1000 steps of programming.

Data Logging

Critical data can be saved and logged into a USB memory stick then retrieved over an Ethernet connection or by removing the USB memory stick from the FT1A Touch and inserting it into a laptop or PC.

0	A		C	D
1	Project Name	FT1A Touch Modbus RTU	5.01	
2	File Type	Data Log Data		
3	Channel No.	1		
4	Source	#D 0		
5	Sampling Method	Fixed Period		
6	Time[Sec]	10		
7 8				
8	Sampling Time	Data001		
9	06/05/2013 15:46:25	10		
10	06/05/2013 15:46:35	19		
11	06/05/2013 15:46:45	28		
15	06/05/2013 15:46:55	17		
13	06/05/2013 15:47:05	46		
14	06/05/2013 15:47:15	55		
15	06/05/2013 15:47:25	64		
16	06/05/2013 15:47:35	73		
17	06/05/2013 15:47:45	83		
18	06/05/2013 15:47:55	92		
19	06/05/2013 15:48:05	101		
20	06/05/2013 15:48:15	110		
21	06/05/2013 15:48:25	119		
22	06/05/2013 15:48:35	128		
23	06/05/2013 15:48:45	137		
24		146		
25	06/05/2013 15:49:05	155		

Easy Program File Transfer

Project files can be transferred between a USB memory stick and the FT1A Touch. It is a quick and convenient way for an OEM to program multiple units and for users to quickly update ladder and HMI programs.



Digital and Analog Inputs

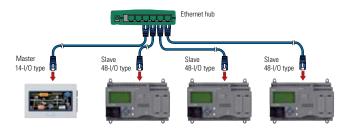
The FT1A Touch is equipped with 8 digital inputs, two of which can be configured as 0-10V DC or 4-20mA analog inputs with 10-bit resolution, reducing overall system cost.

High-speed Counters

With 8 built-in inputs, 4 can be configured as high-speed counters, with a maximum frequency (range) of 10kHz for single-phase or 5kHz for dual-phase.

Remote I/O

Up to three FT1A controllers (24, 40 and 48 I/O) can be configured as remote I/O slaves for the FT1A Touch, expanding your system's potential. A maximum of 158 I/O can be achieved.



Analog Expansion Cartridges

Using analog expansion cartridges, FT1A Touch can accept 0-10V DC, 4-20mA, RTD and Thermocouple inputs, with 12 to 15-bit resolution.

PID Controls

With an improved PID algorithm and easier-to-configure dialog box, PID controls can be monitored using a single screen. Advanced PID control functions, such as auto-tuning, ARW (anti-reset windup) and bumpless transfer, are also supported.

Large Programming Memory

With 47.4KB of logic controls programming memory, complex PLC programs can be constructed without much restriction. And with 5MB of configuration memory for the display, a unique and professional display interface can be easily configured.

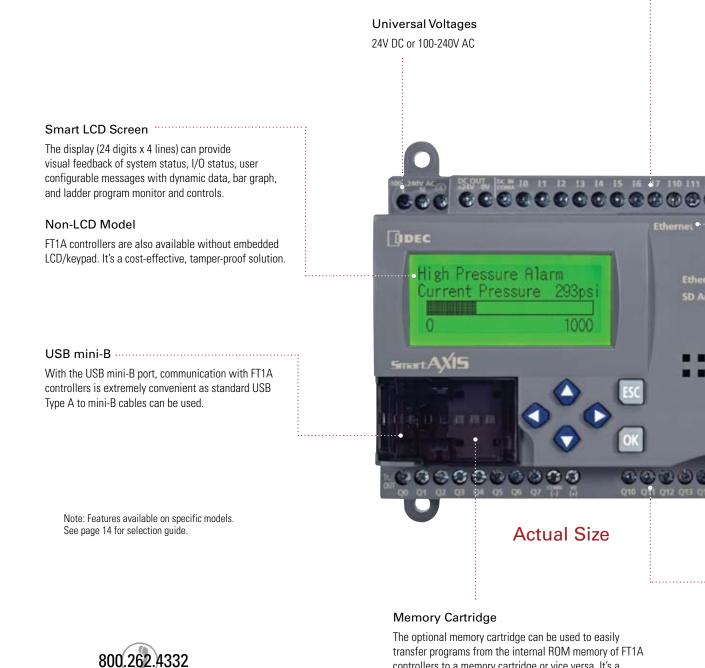
10A Relay Outputs

With 10A contact ratings on all four of the relay outputs, the FT1A Touch can be directly connected to a solenoid valve or motor, which eliminates interposing relays and reduces wiring.



FT1A Controllers

FT1A controllers are designed for a range of applications that demand powerful and abundant features. Available with 12, 24, 40 and 48 I/O with and without embedded LCD/keypad, these controllers enable engineers to design cost-effective solutions.

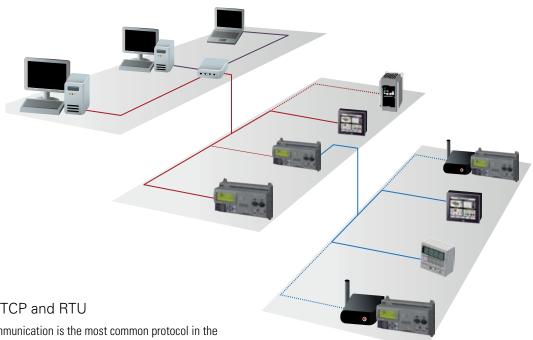


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transfer programs from the internal ROM memory of FT1A controllers to a memory cartridge or vice versa. It's a convenient method to update the PLC program in the field.

From Connecting to Remote Access

From connectivity to remote access to visual display, FT1A leads the way with versatile, full-featured controllers. No other controllers offer such a broad range of capabilities at such a competitive price.



Modbus TCP and RTU

Modbus communication is the most common protocol in the automation industry. The entire FT1A family (except the 12 I/O CPU) supports Modbus TCP and Modbus RTU, making communication with other devices a breeze.

Ethernet Connectivity

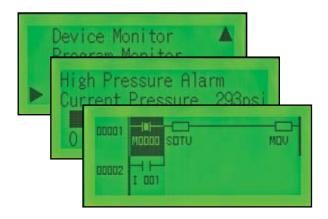
Thanks to the embedded RJ45 Ethernet port (on all models except 12 I/O), FT1A controllers can be easily accessed from remote locations. Using WindLDR software, PLC programs can be updated remotely and critical parameters monitored and controlled. Remote connectivity is a critical part of today's control environment, and FT1A controllers meet every challenge with fast, easy, and reliable Ethernet connectivity.

SD Memory Card

FT1A 40 and 48 I/O controllers are equipped with an SD memory slot for data logging. Memory cards up to 32GB are supported. Log data is time/date stamped and stored in .CSV format, making it simple to review and analyze critical system data.

Smart LCD Display

With the embedded LCD screen, I/O status, system menus, customized dynamic messages, and bar-graph readouts can all be configured and displayed. Ladder programs can be displayed and controlled as well. You can configure up to 50 customized messages, all with dynamic values (24 digits by 4 lines max.). The backlight can be turned on or off. Scrolling and flashing are also supported.



A Complete Automation Suite: All-in-one Configuration Software

Automation Organizer (AO) is a powerful software suite containing WindLDR PLC programming software, WindO/I-NV2 HMI configuration software, WindO/I-NV3 FT1A Touch configuration software, and WindCFG system configuration software. AO is an all-in-one automation software package for IDEC PLCs and IDEC HMIs. The news gets even better, because AO software upgrades are always FREE.

WindO/I-NV3

WindO/I-NV3 is our exclusive configuration software for the FT1A Touch. Using the same platform as WindO/I-NV2 HG HMI programming software, WindO/I-NV3 provides users with the same intuitive experience. Users can easily display alarm screens, trend and bar graphs, scrolling texts and meters. With thousands of industry-standard bitmap libraries, creating a professional interface is just a click away.

WindLDR

All IDEC PLCs—including the FT1A family—are programmed with WindLDR software. This icon-driven programming tool combines logic and intuition with an incredibly easy-to-use interface. Offline simulation, I/O Force and program bookmarks are just some of the standard features you'll find in WindLDR. Newly added for FT1A are Function Block Diagram (FBD) and Script programming. Over the years, WindLDR has proven to be the most user-friendly, intuitive software available for beginners and advanced programmers alike.

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Selection Guide and Part Number Listing

Touch Part Numbers

Touch	Part Number	Screen Type	Total I/O	Input Type	Embedded Analog Inputs	Embedded Analog Outputs	Output Type	Analog Expansion Cartridges	Power Voltage	Remote I/O Master
	FT1A-M14KA-W	3.7″ STN	Source Sink 14 I/O (8 in, 6 out) Source Sink	Source			Transistor Sink			
	FT1A-M14KA-B									
2	FT1A-M14KA-S									
500	FT1A-M14SA-W	Monochrome (8 shades)				Transistor Source				
	FT1A-M14SA-B									
	FT1A-M14SA-S				2pt (0-10VDC, 4-20mA, 10-bit Resolution)	2pt (0-10VDC, 4-20mA, 10-bit Resolution)		Yes, up to 2 cartridges		Yes
	FT1A-C14KA-W						Transistor Sink			Yes
	FT1A-C14KA-B	3.8" TFT 65,536 colors		Source					24V DC	
Real Property lies	FT1A-C14KA-S									
	FT1A-C14SA-W									
	FT1A-C14SA-B					Transistor Source				
	FT1A-C14SA-S									
	FT1A-M12RA-W	3.7" STN Monochrome (8 shades) 3.8" TFT 65,536 colors			2pt (0-10VDC, 10-bit Resolution)	-	Relay	-		
	FT1A-M12RA-B									-
	FT1A-M12RA-S		12 I/O	0.1						
	FT1A-C12RA-W		(8 in, Sink 4 out)	SIUK						
Distance in the local	FT1A-C12RA-B									
Million	FT1A-C12RA-S	00,000 001010								

Touch Starter Kits

	Part Number	Description
	KIT-TOUCH-DKW	FT1A Touch Starter Kit, Transistor sink output type, Light bezel, USB cable, 30W PS and software
	KIT-TOUCH-DKB	FT1A Touch Starter Kit, Transistor sink output type, Dark bezel, USB cable, 30W PS and software
	KIT-TOUCH-DKS	FT1A Touch Starter Kit, Transistor sink output type, Silver bezel, USB cable, 30W PS and software
111- OT	KIT-TOUCH-DSW	FT1A Touch Starter Kit, Transistor source output type, Light bezel, USB cable, 30W PS and software
	KIT-TOUCH-DSB	FT1A Touch Starter Kit, Transistor source output type, Dark bezel, USB cable, 30W PS and software
	KIT-TOUCH-□SS	FT1A Touch Starter Kit, Transistor source output type, Silver bezel, USB cable, 30W PS and software
	KIT-TOUCH-□W	FT1A Touch Starter Kit, Relay output type, Light bezel, USB cable, 30W PS and software
	KIT-TOUCH-□B	FT1A Touch Starter Kit, Relay output type, Dark bezel, USB cable, 30W PS and software
	KIT-TOUCH-⊡S	FT1A Touch Starter Kit, Relay output type, Silver bezel, USB cable, 30W PS and software

In place of \Box insert code for display type: C = color, M = monochrome

Touch Accessories

Part Number	Description
FC6A-PJ2A	2-pt 0-10V, 4-20mA Analog input cartridge
FC6A-PJ2CP	2-pt RTD, Thermocouple cartridge
FC6A-PK2AV	2-pt 0-10V Analog output cartridge
FC6A-PK2AW	2-pt 4-20mA Analog output cartridge
FT9Z-1D3PN05	FT1A Touch screen protective sheet (5 per pack)
FT9Z-1E3PN05	FT1A Touch protective cover (5 per pack)
FT9Z-1A01	FT1A Touch rear mount adapter
FT9Z-1T09	FT1A Touch extra communication terminal block
FT9Z-1X03	FT1A Touch extra power supply terminal block
HG9Z-4K2PN04	FT1A Touch extra mounting brackets (4 per pack)
HG9Z-XU1PN05	USB cable lock-in (5 per pack)
HG9Z-XCM2A	USB programming cable
SW1A-W1C	Automation Organizer Software Suite

Controller Accessories

Part Number	Description	
FT1A-PC1	RS232C communication adapter, mini-DIN type	
FT1A-PC2	RS485 communication adapter, mini-DIN type	
FT1A-PC3	RS485 communication adapter, screw terminal type	
FT1A-PM1	Optional memory cartridge	
FT9Z-PSP1PN05	Extra direct mounting hook (5 per pack)	
SW1A-W1C	Automation Organizer Software Suite	
HG9Z-XCM2A	USB programming cable	



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Specifications

General Specifications

Touch (PLC + HMI)				
Part Number	FT1A-*12RA-*	FT1A-*14KA-* / FT1A-*14SA-*		
Output	Relay output	Transistor output		
Rated Power Voltage	2-	4V DC		
Allowable Voltage Range	20.4 to 28.8V E	DC (including ripple)		
Power Consumption	9.2W maximum	10.1W maximum		
Allowable Momentary Power Interruption	10ms	maximum		
Dielectric Strength	Between power terminal and FG: 500V AC, 5mA, 1 minute, Between power terminal and output terminal: 2,300V AC, 5mA, 1 minute	Between power terminal and FG: 500V AC, 5mA, 1 minute, Between power terminal and output terminal: 500V AC, 5mA, 1 minute		
EMC Immunity	IEC/EN 61131-2:2007 compliant			
Inrush Current	50A maximum (5ms maximum)			
Operating Temperature	Color display: -20 to +55°C, Monochrome display: 0 to +55°C Note 2			
Storage Temperature	-20 to +60°C (no freezing)			
Relative Humidity	10 to 95% RH (no condensation)			
Pollution Degree	2 (IEC	2 60664-1)		
Corrosion Immunity	Atmosphere free	from corrosive gases		
Degree of Protection	IP66F, Type 4X & 13 (Pa	anel front) Note 1, IP20 (Rear)		
Ground	Function	al grounding		
Protective Grounding Conductor	UL100	07 AWG16		
Vibration Resistance	5 to 8.4Hz half amplitude 3.5mm, 8.4Hz to 150Hz acceleration 9.8m/s 2 (16)	G), 2 hours per axis on each of three mutually perpendicular axis (IEC 61131-2)		
Shock Resistance	147m/s², 11ms, X, Y, Z dir	rections 3 times (IEC 61131-2)		
Mounting Structure	Pane	el mount		
Weight (approx.)	300g	250g		

1. Operation not guaranteed when used with certain types of oils. 2. FT1A-*12RA-* hardware version V130 and earlier is UL, c-UL listed at 0 to +50°C.

Pro/Lite (LCD Model/No LCD Model)		12-I/O Type	24-I/O Type	40-I/O Type	48-I/O Type			
Part Number		H12RC / H12RA B12RC / B12RA	H24RC / H24RA B24RC / B24RA	H40RC / H40RKA / H40RSA B40RC / B40RKA / B40RSA	H48KC / H48SC / H48KA / H48SA B48KC / B48SC / B48KA / B48SA			
Rated Power Voltage		AC power: 100 to 240V AC, DC power: 24V DC						
Allowable Voltage Range		AC power: 85 to 264V AC, DC power: 20.4 to 28.8V DC (including ripple)						
Rated Power Frequency		AC power: 50 to 60Hz (47 to 63Hz)						
Power	AC Power			um, 40-I/O: 48VA maximum, 48-I/O: 43VA				
Consumption	DC Power	12-1/0:4		um, 40-I/0: 7.9W maximum, 48-I/0: 6.0V	V maximum			
Allowable Momentary Po	wer Interruption		AC power: 20ms maximu	um; DC power: 10ms maximum				
Dielectric Strength		AC power type: Between power/input and PE terminals: 1,500V AC, 5mA, 1 minute Between relay output and PE terminals: 1,500V AC, 5mA, 1 minute Between relay output and PE terminals: 2,300V AC, 5mA, 1 minute Between power/input and transistor output terminals: 1,500V AC, 5mA, 1 minute Between power/input and relay output terminals: 2,300V AC, 5mA, 1 minute DC power type: Between power/input and FE terminals: 500V AC, 5mA, 1 minute Between power/input and FE terminals: 500V AC, 5mA, 1 minute Between transistor output and FE terminals: 500V AC, 5mA, 1 minute Between relay output and FE terminals: 500V AC, 5mA, 1 minute Between relay output and FE terminals: 500V AC, 5mA, 1 minute Between power/input and transistor output terminals: 500V AC, 5mA, 1 minute Between power/input and relay output terminals: 500V AC, 5mA, 1 minute Between power/input and relay output terminals: 500V AC, 5mA, 1 minute						
EMC Immunity			IEC/EN 6113	1-2:2007 compliant				
Inrush Current		AC power: 35A maximum (Cold start with Ta=25°C, 200V AC), DC power: 30A maximum (5ms maximum)						
Operating Temperature		0 to +55°C ^{Note 1}						
Storage Temperature		-25 to +70°C (no freezing)						
Relative Humidity		10 to 95% RH (no condensation)						
Pollution Degree		2 (IEC 60664-1)						
Corrosion Immunity		Atmosphere free from corrosive gases						
Degree of Protection		IP20 (IEC 60529)						
Ground		D-type ground (Class 3 ground)						
Protective Grounding Conductor		UL1007 AWG16						
Vibration Resistance		5 to 8.4Hz half amplitude 3.5mm, 8	3.4Hz to 150Hz acceleration 9.8m/s²(1	G), 2 hours per axis on each of three mu	tually perpendicular axis(IEC 61131-2)			
Shock Resistance			147m/s², 11ms, X, Y, Z d	irections 3 times (IEC 61131-2)				
Mounting Structure			DIN rail	or direct mount				
Weight (approx.)	AC Power		12-I/0: 230g, 24-I/0: 40	0g, 40-1/0: 580g, 48-1/0: 540g				
weight (approx.)	DC Power		12-I/0: 190g, 24-I/0: 31	0g, 40-I/O: 420g, 48-I/O: 380g				

FT1A Version V110 are UL, c-UL Listed at 0 to +50°C.

Display Specifications

Tou	Touch/Pro (PLC + HMI/Built-In LCD)							
Мо	del	Tou	Pro (Built-in LCD)					
Disp	olay Element	TFT color LCD	STN monochrome LCD	STN monochrome LCD				
Colors/Shades		65,536 colors	Monochrome 8 shades	Monochrome				
Effe	ctive Display Area	88.92 W x 37.05 H mm	87.59 W x 35.49 H mm	47.98 W x 18.22 H mm				
Disp	olay Resolution	240 W x 10) H pixels	192 W x 64 H pixels				
Viev	v Angle	Left/right 40°, top 20°, bottom 60°	Left/right/top/bottom: 45°	Left/right 30°, top 20°, bottom 40°				
Con	trast Adjustment	Not Available	32 levels	Not Available				
Bac	klight	LED	LED (white, red, pink)	LED (green)				
Bac	klight Life	50,000 ho	UTS Note 1	—				
Brig	htness	400cd/m ^{2 Note 2}	740cd/m ^{2 Note 2}	45cd/m ^{2 Note 2}				
Brig	htness Adjustment	32 lev	vels	Not Available				
Bac	klight Control		On/off					
Bac	klight Replacement		Not Available					
	1/4 Size	8 x 8 pixels (Japanese Ka ISO 8859-1 [Latin 1], ANSI ANSI 1257 (Baltic), A	—					
Display Character Size	1/2 Size	8 x 16 pixels (Japanese K ISO 8859-1 [Latin 1], ANSI ANSI 1257 (Baltic), A	8 x 16 pixels Japanese Katakana, JIS 8-bit code, ISO 8859-1 (Latin 1), ANSI 1251 (Cyrillic)					
splay Chi		16 x 32 pixels, 24 x 48 pixels, 32 x 64 pixels (Western European languages: ISO 8859-1)		—				
Di	Full Size	16 x 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)		16 x 16 pixels (Japanese JIS first level characters, Chinese)				
	Double Size	32 x 32 pixels (Japanese JIS first	—					
ters	1/4 Size	30 characters x 1	2 lines/screen	—				
of Characters	1/2 Size	30 characters x	30 characters x 6 lines/screen					
of Ch	Full Size	15 characters x	6 lines/screen	12 characters x 4 lines				
ë Double Size		7 characters x 3	lines/screen	—				
Character Magnification		0.5x, 1x, 2x, 3x, 4x, 5x, 6x, 7x, 8x, vertically and horizontally		—				
Character Attributes		Blink, reverse, bo (blink is 1 c	Blink, reverse					
Gra	phics	Line, polyline, polygon, rectangle, c polygons (3, 4, 5, 6		—				
Wir	dow Display	3 pop-up screens +	1 system screen	_				

The backlight life refers to the time until the brightness reduces by half after use at 25°C.
 Brightness of LCD only (monochrome LCD: when lit white).

Operation Specifications

Touch/Pro (PLC + HMI/LCD Models)					
Model	Touch	Pro (Built-in LCD)			
Switching Element	Analog resistive membrane (touch panel)	Rubber switches			
Operating Force	0.2 to 2.5N	2.0N minimum			
Mechanical Life	1 million operations	10,000 operations			
Acknowledgment Sound	Electric Buzzer	Not provided			
Multiple Press	Not possible	Possible			

Get Intensive Hands-on PLC and HMI Training



Looking to improve your knowledge of PLCs and HMIs? IDEC's training course combine hands-on instruction and real-world examples. Some of the covered topics include:

- Start/stop and latching circuits
- Timers and counters
- Modbus/TCP communications
- Email/Text and web page setup
- PID configuration

- · Pushbuttons, pilot lights
- Data displays and data inputs
- Graphics and animation
- Alarms and passwords
- Remote control and monitor

The training course covers programming for SmartAXIS and MicroSmart Pentra PLCs, SmartAXIS Touch (HMI+PLC) and HG series HMIs and includes Q&A sessions with our experts to discuss your specific application.

Choose from five kits featuring introductory-level products all the way up to our most advanced HMIs and PLCs! For detailed information, our current schedule and to sign up for a class, visit http://training.IDEC.com.





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USA

IDEC Corporation Tel: (408) 747-0550 opencontact@IDEC.com

Australia IDEC Australia Pty. Ltd. Tel: +61-3-8523-5900 sales@au.IDEC.com

Canada

IDEC Canada Ltd. Tel: (905) 890-8561 sales@ca.IDEC.com

Japan

IDEC Corporation Tel: +81-6-6398-2571 marketing@IDEC.co.jp

China IDEC (Beijing) Corporation Tel: +86-10-6581-6131

IDEC (Shanghai) Corporation Tel: +86-21-6135-1515 idec@cn.IDEC.com

IDEC (Shenzhen) Corporation Tel: +86-755-8356-2977

Germany IDEC Elektrotechnik GmbH

Tel: +49-40-253054-0 service@IDEC.de

Hong Kong IDEC (H.K.) Co., Ltd. Tel: +852-2803-8989 info@hk.IDEC.com

Singapore IDEC Asia Pte. Ltd. Tel: +65-6746-1155 info@sg.IDEC.com Taiwan IDEC Taiwan Corporation Tel: +886-2-2698-3929 service@tw.IDEC.com

Thailand IDEC Asia (Thailand) Co., Ltd. Tel: +662-392-9765 sales@th.idec.com

United Kingdom IDEC Electronics Ltd. Tel: +44-1256-321000 sales@uk.IDEC.com



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