

Appendix FB-DAP Simple Human Machine Interface

In addition to timer, counter, register, and contact data access function, the date setter of FB-DAP can connect to many others for alarm message display, self-defined buttons, wireless card reading, and the like simple human-machine (HM) functions.

■ FB-DAP Simple HM

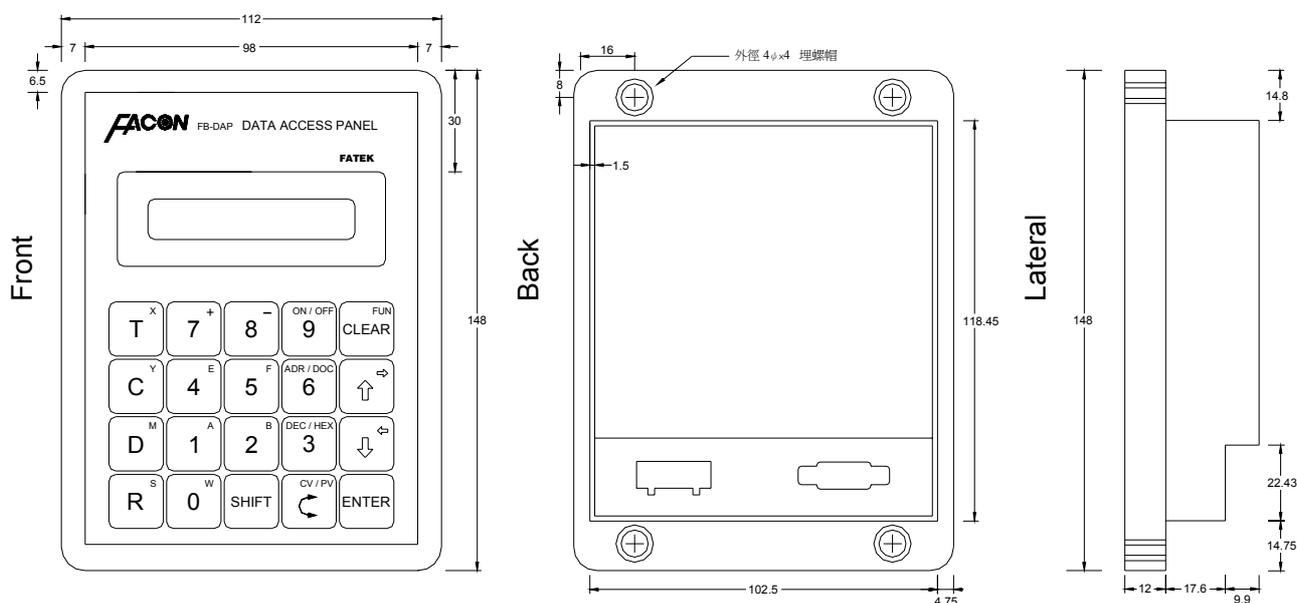
Spec. / Model	FB-DAP-A(R)	FB-DAP-B(R)
Display	LCD (English version), 2-line×16-character, LED backlight	
Button	20-key (4×5)	
Wireless Card reading	-AR and -BR only · distance 12~18cm	
Power supply	5V	24V
Current consumption	100mA (120mA)	41mA (48mA)
Com. Interface	HCMOS	RS-485
Service points connected	Single set	Max. 16-set connected
PLC Com. Port connected	port 0	port 0,1,2 (In which port 0 and 1 needed to be converted as RS-485)
General feature	Timing/counting · register · contact access(write protected for each)	
Special feature	Alarm · message display · self-definition of special speed keys	
Card writing feature	Order for machine types with special numbers to us is required	

※ PLC's MA、MU type machines can be connected to FB-DAP-B(R) only through FB-485 switch.

■ Wireless sensing card

Spec. / Model	CARD-1	CARD-2
Memory	64bits with Cyclic Redundancy Check (CRC) on data	
Operation temp.	-25°C~50°C (conforming to ISO7810)	
Power supply	Battery not required (power supplied from wireless electric waves released by an -AR/-BR card-reading module)	
Sensing distance	12cm~18cm(from FB-DAP front)	
Number of writing	unwritable(uncopiable · exclusively)	10000 times at least
Size (mm)	86×54×13	
Weight (Gram)	12	

1.1 Profile



1.2 Important points before operation

- 1、FB-DAP possesses a function to return to the operation mode (general data setter and self-definition 8/16 speed keys) before power failure and each DAP can be place in a different mode when connecting many sets.
- 2、When operating FB-DAP , D2944~D3071 register of PLC will be used as the systematic architecture zone (in which data set by all the FUN functions can be stored except item 11) , the user shall avoid this zone.
- 3、Any communication port, once converted to a RS-485 interface (port 2 is itself a RS-485 interface), can be connected to a maximum of 16 FB-DAP-B(R) sets.

PLC port0 (HCMOS)	⇒	FB-485P0 switch head	⇒	RS-485 interface	}	Only thus so the FB-DAPB (R) can be connected to.
PLC port1 (RS-232)	⇒	FB-485 switch	⇒	RS-485 interface		
- 4、When PLC is connected with FB-DAP-B(R) , the service point numbers of PLC are limited to a range of 1~32.
- 5、Parameters for the connection between PLC and FB-DAP-B(R)(DAP automatic detection Baud Rate 9600 / 19200 / 38400)

port0、1、2 : 9600 / 19200 / 38400、Even、7Data bits、1Stop bit

ex : R4158=5521H, i.e. port2 being 9600 ; R4158=5523H, i.e. port2 being 38400.
- 6、When many sets of DAP are connected, if any two or more have the same service point number, then DAP will request for number change, which can be done by only entering " [C] + [D] + [new DAP] + [ENTER] " 即可。
- 7、The transmission line of the RS-485 interface must use a twisted pair with a shielded cover on the outer layer. Please refer to chapter 12-5 in the Operation Manual II for other important points.
- 8、The scanning time of PLC will affect the update time of DAP.
- 9、The OS of FB-DAPB(R) shall be new V2.00 above PCB so that multiple sets can be connected. Press [SHIFT] + [FUN CLEAR] + [↓] then the OS version is displayed.
- 10、When PROLADDER(or FP07) and DAP are connected to the same set of PLC, to change the program through PROLADDER is not allowed; if so, the timer information displayed by DAP won't be correct (In this

case, the DAP shall be reset).

11 · Versions after the OS V3.15 (including) of FP-07 can be aimed for DOCs in 16 words of contacts, registers.

1.3 The Main Functions of FB-DAP

The main functions of FB-DAP can be categorized as : setter functions of general information, FUN functions of parameter setting, wireless card reading, and message display function. The details of the functions will be introduced in the following sections.

1.4 Setter Functions of General Information

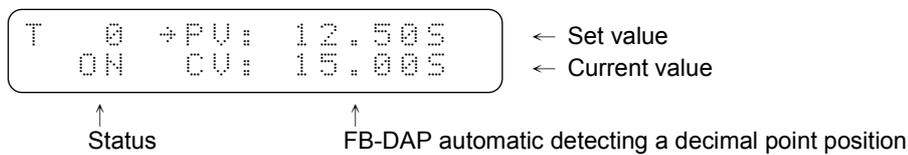
FB-DAP can be used as a “TC setter” as well as the access to registers (R · D · W) and contacts (X · Y · M · S). In the FUN functions in the following sections, it can also be used as write-protect with T · C · R · D · X · Y · M · S. There are two measures to monitor information: ADR (general addresses) and DOC monitoring. The latter shall make DOC compilation (16 words in English, symbols, numbers) in advance through Proladder or FP07 for T, C, register R/D and contacts so the DOC can be displayed.

1 · ADR Monitoring

A. Timer and Counter Monitoring

【Pressing Keys】 : $\boxed{T^x}$ or $\boxed{C^y}$ + $\boxed{\text{number}}$ + $\boxed{\text{ENTER}}$

T or C number Cursor position

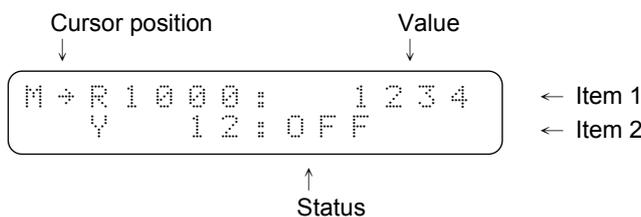


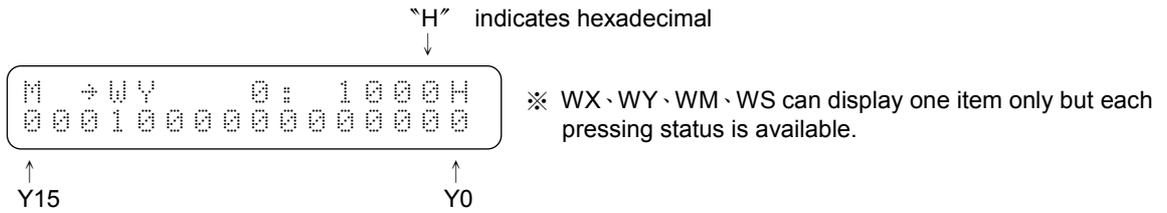
B. Registers (R · D · DR · DD · WX · WY · WM · WS) and contacts (X · Y · M · S) monitoring

【Monitored range】

Type	T	C	D	R	DD	DR	WX	WY	WM	WS	X	Y	M	S
Range	0 255	0 255	0 2943	0 8071	0 2492	0 8070	0 240	0 240	0 1984	0 984	0 255	0 255	0 2001	0 999

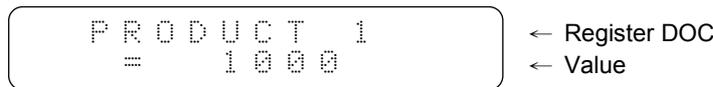
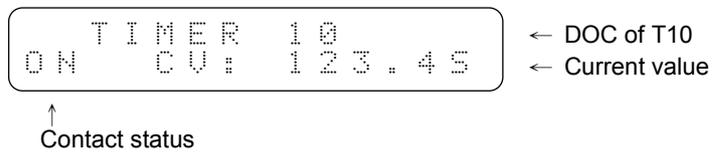
【Pressing keys】 : $\boxed{R^s}$ or $\boxed{D^m}$
 $\boxed{D^m}$ + ($\boxed{R^s}$ or $\boxed{D^m}$)
 $\boxed{\text{SHIFT}}$ $\boxed{0^w}$ + $\boxed{\text{SHIFT}}$ ($\boxed{T^x}$ or $\boxed{C^y}$ or $\boxed{D^m}$ or $\boxed{R^s}$)
 $\boxed{\text{SHIFT}}$ ($\boxed{T^x}$ or $\boxed{C^y}$ or $\boxed{D^m}$ or $\boxed{R^s}$)





- Note :
- 1 · Pressing  can move the cursor up and down or switch between CV or PV.
 - 2 · Pressing  or  can decrease or increase the monitored item number.
 - 3 · For a monitored item value, input a new value directly and then press . The status of the contacts can be changed by pressing  + .
 - 4 · Pressing  +  can change the means to display a value (either with decimal or hexadecimal system).

2 · DOC monitoring



- Note :
- 1 · Pressing  +  can switch the monitoring of ADR and DOC.
 - 2 · The display switch between CV (current value) and PV of the timer (counter) can use .
 - 3 ·  or  can be moved up or down to next monitored item with DOC.

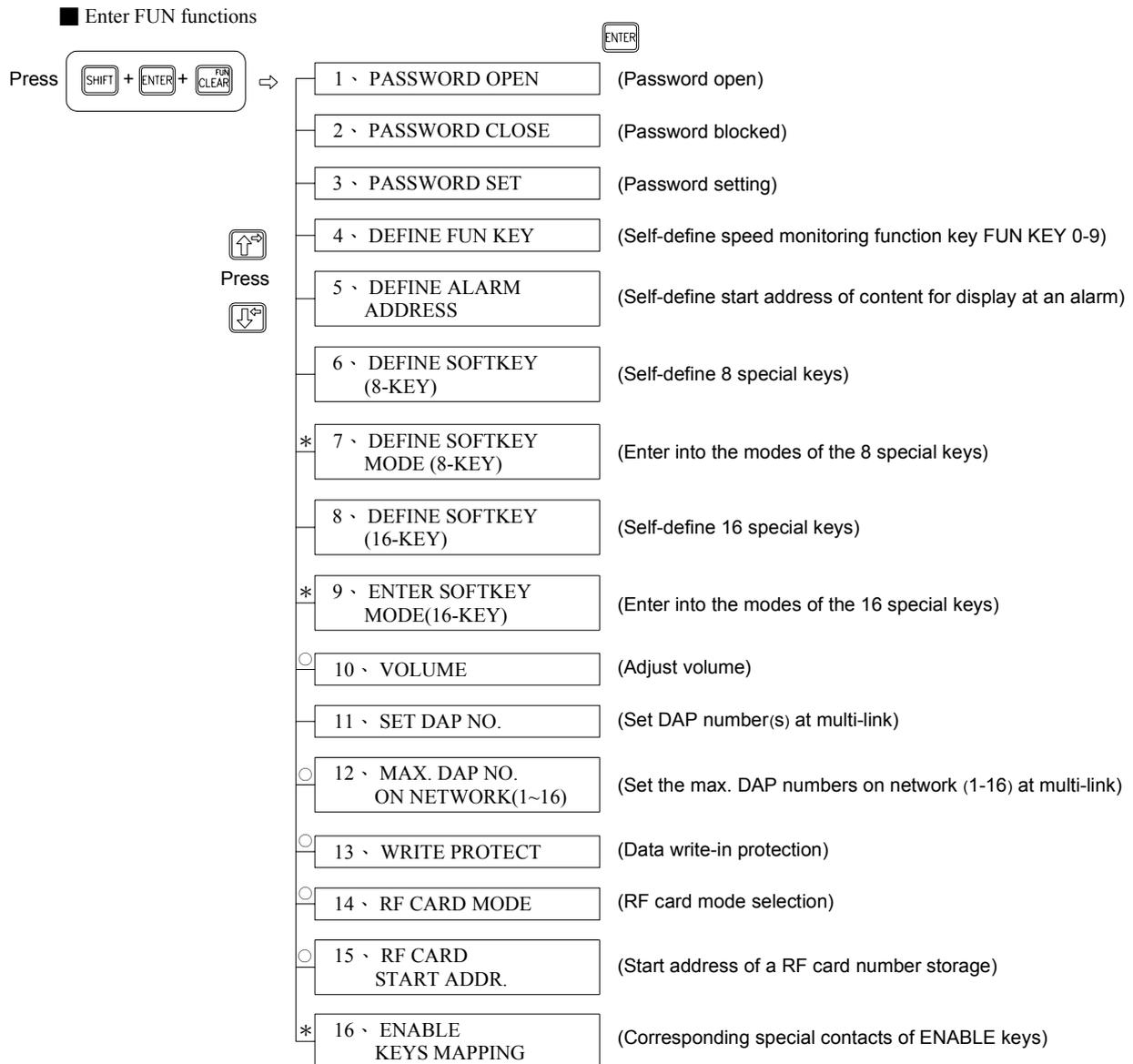
3 · Speed monitoring FUN keys(FUN KEY 0~9, totaling 10 keys)

【Pressing keys】 :  +  ( ~ ) ⇒ Direct display of a monitored item set by the client.

- Note :
- 1 · Items to be monitored can be set from the following “FUN functions”.
 - 2 · Items to be monitored can be displayed with general or DOC means.

1.5 FUN Functions

1.5.1 In and out of FUN functions



* : Indicates when multiple DAPs are connected, each DAP can be set respectively.

○ : Indicates when multiple DAPs are connected, the information set by one of them is not available for use until PLC is reset.

■ Exit of FUN functions to general information setter functions. Press  +  + 

Note: 1 · When several DAPs are connected, information can be stored to PLC (D2944~D3071) if one of the DAP is set in all the FUN functions (except item 11).

2 · After entering FUN 4~15, without password protection, all the FUN functions can be executed by only pressing . With password protection, it is required to pass it first before executing FUN functions.

3 · If it is password-protected, FB-DAP will be set in a password protection status at each beginning of operation.

4 · FUN items 1~9 can be entered with numeric keys directly and then go straight to that function.

5 · After executing a item of FUN functions, if execution of other items is required, press the three keys  again.