Features of DAPL 3000 Dependent on DAP Model

This listing covers the following models:

xDAP 7400

xDAP 7410

1. Input Operating Voltage Ranges

The input voltage range is fixed. Within that range, the operating differential range is software-programmable.

Model	Nominal Input Range
xDAP 7400	-10V to +10V
xDAP 7410	-10V to +10V

2. Input Sampling — Differential Analog Voltage Range

The input voltage ranges are software-programmable. These full-range input intervals yield values spanning the full digitized output range.

Model	-0.1 to +0.1 (gain 100)	-0.2 to +0.2 (gain 50)	-0.5 to +0.5 (gain 20)	-1.0 to +1.0 (gain 10)	-2.0 to +2.0 (gain 5)	-5.0 to +5.0 (gain 2)	-10.0 to +10.0 (gain 1)
xDAP 7400	x	x	x	x	x	x	x
xDAP 7410	x	x	x	x	x	x	x

3. Input Converter Precision

Model	Precision
xDAP 7400	Rounded to 16 bits
xDAP 7410	Rounded to 16 bits

4. **Channel selectors**

The number of selector channels determines the maximum number of input sources that can be captured or digitized simultaneously. Hardware pin mappings determine which pins are electrically routed to which channel selectors. This hardware is not reconfigurable. For maximum parallelism in data capture, route signals through as many of the channel selectors as possible.

Model	Selector channels available	Selector addresses		
xDAP 7400	8	**default**		
		0. D0, D1		
		1. D2, D3		
		2. D4, D5		
		3. D6, D7		
		4. D8, D9		
		5. D10, D11		
		6. D12, D13		
		7. D14, D15		
xDAP 7410	8	**default (C0:)**	**legacy 1 (C1:)**	**legacy 2 (C2:)**
		0. D0, D1	0. D0	0. D0
		1. D2, D3	1. D1	1. D1
		2. D4, D5	2. D2	2. D2
		3. D6, D7	3. D3	3. D3
		4. D8, D9	4. D4	4. D4
		5. D10, D11	5. D5	5. D5
		6. D12, D13	6. D6	6. D6
		7. D14, D15	7. D7	7. D7

5. **Number of Differential Analog Input Signal Pins**

Model	Differential input pin-pairs available
xDAP 7400	**16** (fixed)
xDAP 7410	**16** (fixed) **8 + 8** (optional)

6. **Outputs Ports**

Different models may support clocked or unclocked output ports.

Clocked output ports (configured by ODEFINE procedure) receive multiple data channels via a predefined OPIPES channel pipe. Unclocked output ports receive data via DACOUT or DIGITALOUT processing.

Model	Port type	Direction	Lines	Clocked
xDAP 7400	digital	input	16	no
	digital	output	16	no
xDAP 7410	digital	input	16	no
	digital	output	16	no

7. Input Channel List Size (`CHANNELS`)

The total number of channels defined by SET commands cannot exceed this limit. Input signal pins can be sampled more than once into separate logical channels, so the number of logical channels can exceed the number of physical channels. For differential analog inputs, each channel uses two hardware lines, so the number of input channels also does not correspond to the number of physical wires.

Model	Maximum channels in channel list
xDAP 7400	1024
xDAP 7410	1024

8. Timing Resolution for Capture and Conversion

Time intervals specified by TIME and SCAN commands must be exact integer multiples of these time intervals. If some other time interval is specified, the value will be automatically adjusted, which might produce unexpected side effects.

Model	Sample capture time resolution
xDAP 7400	0.020 (20 nanoseconds)
xDAP 7410	0.020 (20 nanoseconds)

9. Sampling Operations Time Interval

Time intervals between individual sampling/capture operations, as specified by a TIME command, must be within these time interval bounds. These limitations are forced by characteristics of the hardware devices. Units are microseconds.

Model	Minimum	Maximum
xDAP 7400	1.00	10000.00
xDAP 7410	1.00	10000.00

10. Channel List Scan Time Interval

Time intervals for capturing a value for each channel in an input channel list, as specified by SCAN command, must be within these time interval bounds. These limitations are forced by characteristics of the hardware devices. Units are microseconds.

Model	Minimum	Maximum
xDAP 7400	1.00	100000.00
xDAP 7410	1.00	100000.00

11. Accessory Restrictions

No output expansion for updating

xDAP 7400
xDAP 7410

No input expansion for sampling

xDAP 7400

Analog low-density differential input panels only

xDAP 7410

No digital counter accessory support (CTCOUNT, CTRATE)

xDAP 7400
xDAP 7410

12. Processing Task Scheduling Intervals (OPTION QUANTUM)

Units are in microseconds.

Model	Minimum quantum	Maximum quantum
xDAP 7400	100	50000
xDAP 7410	100	50000

13. Rescue task scheduling (OPTION RQUANTUM, OPTION RINTERVAL)

Experts only, and only if there is time for careful testing!

Units are in microseconds.

Model	Minimum RQUANTUM	Maximum RQUANTUM	Minimum RINTERVAL	Maximum RINTERVAL
xDAP 7400	20	1000	5000	20000
xDAP 7410	20	1000	5000	20000

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