

# DAP 91.1 - Flexible - Economy

Digital Amplifier for Panel mount DAP 091.100.5. Ver. 1.0x.

Weighing device for **industrial** standard applications where **reliability, flexibility** and **ease of use** is required. The DAX 9x family offers a wide selection of accessories for digital and analogue communication as well as logic I/O's, real time clock, storage facilities and built in line power supply.

The DAP is **composed for the purpose**, thus providing the required facilities for the task –no more –no less.

- Most **Field bus standards**, all isolated, can be met by selection of Extension Boards.
- **OIML R76 approved** for non-automatic weighing (Pending). Eases the MID approvals of R51, R61 and R107 applications.
- Permit **Multi range** calibration in two or three ranges 1x; 2x; 5x or 2x; 5x; 10x.
- Internal **precision reference 2.000.0mV/V** for **mV/V calibration** without loading the scale.
- Automatic **detection of load cell errors**, signalized visually and digitally.
- A library of specialized firmware for **check weighing, grading or filling applications** is available.
- Extension Boards for optional functionality: **Analog 0/4-20mA output; Logic inputs, Logic outputs; Clock/calendar, alibi memory; Line power supply 230Vac or 115Vac**. All the EB's are isolated and built into the DAP.
- **RS232 full duplex** interface is standard for set-up, service and general com.
- A **graphic presentation, analysis** and set up PC program, **DOP** is available.



Permit differential input signal; Resolution  $\pm 100\ 000$  counts at 2mV/V input.  
Digital 1<sup>st</sup> or 2<sup>nd</sup> order Bessel filters to be set in eight steps.  
Can drive 8pc 350 $\Omega$  or 24pc 1100 $\Omega$  load cells.  
The mV/V calibration facility permits span calibration without loading the scale if the load cell output is known.

Software for special purposes is created upon request.

Enhanced reliability in any industrial environment assured:

- All Field bus ports are isolated to 500Vac.
- The DC power supply input is isolated to 500Vac.
- The AC line power supply conform to EN60950
- Extended temperature range -25°C/+55°C.
- IP65 splash proof from the front when panel mounted.
- Meticulous protection against any relevant electric or electro magnetic influence.

<b>Input and A/D</b>	Linearity	<0,001% of full scale.	
	Load cell excitation voltage	5 Vdc	
	Load cell drive capability	R <sub>LC</sub> 45-2000 ohm	
	Load cell wiring system	6 wires inclusive sense	
	Load cell input range	±3.8 mV/V equivalent to ±19 mVdc.	
	Load cell input resolution	≈100 nV/incl. (≈100 000 counts at 2 mV/V input)	
	A/D-performance	100 updates/second	
	Analog LP filter performance	700 Hz; 20 db/decade	
	Digital 1 <sup>st</sup> order LP filter performance	5 – 0.02 Hz; Bessel, selectable in 8 steps	
	Digital 2 <sup>nd</sup> order LP filter performance	5 – 0,02 Hz, Bessel, selectable in 8 steps	
	Display update rate	5 updates/second	

<b>General</b>	Hardware interface	RS232 – full duplex
	Data transmission, rates	9.6; 19.2; 38.4; 57.6; 115.2 kBaud
	Data transmission, protocol	Get results or auto transmit
	Display	7 digit 8 seg. green LED's, 14mm. Spectral filtered
	Keyboard	6 pc 13x13mm robust, short travel push buttons
	Power supply	12-24Vdc ≤15% ripple; ≤4Watt (isolated, protected).

<b>Field Buses</b>	Optional to select. Up to four Extension Boards can be installed the DAP91	
EB191.1	CAN-open adaptor, isolated	
EB192.1	Profi bus adaptor, isolated	
EB193.1	Ether net adaptor, isolated	
EB193.2	Profi net adaptor, isolated	
EB193.3	Mod bus at Ethernet adaptor, isolated	
EB195.1	RS422/485 interface, isolated	9.6; 19.2; 38.4; 57.6; 115.2kB full duplex
EB195.2	Mod bus at RS485 adaptor, isolated	
EB196.1	Analog current output, isolated	0-21mA , resolution 0,3µA, 100 updates/sec.
EB196.2	Analog current output, not isolated	4-20mA , resolution 1µA, 100 updates/sec.

<b>Accessories</b>	Optional to select. Up to four Extension Boards can be installed the DAP91	
EB197.1	Two logic inputs, isolated	10-30Vdc; <3.5mA;
	+ two logic output, isolated	FET bidirectional relays; 45Vdc or ac; 0,5A;
EB198.1	Real time clock/calendar	
EB198.2	Real time clock/calendar +alibi memory	120000 records
	The line/mains power supply can be installed in addition to the Extension Boards	
PB199.1	Line voltage power converter, isolated	230Vac; 50/60Hz; 5VA
PB199.2	Line voltage power converter, isolated	115Vac; 50/60Hz; 5VA

<b>Influences</b>	Temperature effect on Zero	Typical ±2ppm/°K, Max ±4ppm/°K	
	Temperature effect on Span	Typical ±4ppm/°K, Max ±8ppm/°K	
	Temperature range	Operating: -25°C/+55°C; Storage -30°C/+60°C	
	Relative humidity	0-95 % non condensing	
	General I/O protection, all connections	Reversed polarity, excess voltage and surge	
	Vibration	2.5 G operational; 5 G non-operational	
	Protection un-installed, environment	IP40	
	Protection installed, environment	IP65 from front only	

<b>Dimensions</b>	Frontal exterior	Panel cut out 138x68mm. Frame 146x74x12,5mm
	Total depth	129mm; behind panel 117mm + cable plugs.
	Weight	1.040g (2,3Lb) Net. Packed 1.330g (3,9Lb)
	I/O terminals	3x3 pc. pluggable screw terminals, 5mm pitch; 1 pc M4 ground bolt; Sub-D 9 pin male. + accessories.

<b>Standards</b>	Cabinet and panel cut out comply with	DIN43700/IEC61554
	Conform to Council Directive	CE in accordance with 93/98/EEC; 89/336/EEC
	Certificate of approval	OIML R76 (Pending)
	Certified accuracy	Class III: 10000e; 0,5 µV/VSI