

# FREQUENCY, PULSE COUNTER, TACHOMETER, DISPLAY

## DM4500F

- Tachometer / Totalizer (8 Digits)
- Frequency Meter
- Pulse Counter (5 digits) + Totalizer (8 digits)
- Suitable For Magnetic Pick Up
- Suitable NPN / PNP Input
- Suitable For Contact Closure
- Suitable For Namur Sensors
- Sensor Excitation
- Relay, NPN/ PNP, Current / Voltage Output Options



### ➤ INTRODUCTION

The DM4500F accepts various types of pulse and frequency inputs to display Rate, Totalise, Flow, RPM and Pulse Count enabling the DM4500F to be used in a variety of applications. Output options are provided that include NPN / PNP, 2 or 4 relays, current / voltage and RS485 comms. The unit can be fully programmed from the front panel buttons or via the RS485 comms option.

When used as a frequency meter and pulse counter, 5 digit resolution is provided. The totalizer function has an 8 digit resolution displayed in 2 parts. All parameters can be entered by pressing combinations of the three sealed front panel keys through a series of menus in helpful mnemonics or via the optional communications port.

The display can be programmed to read in three different colours and two levels of brightness. Red, Green and Orange. Colours can be programmed in a variety of different ways. For example alarm, normal running or high scale.

### ➤ SPECIFICATIONS @ 20 °C

#### INPUT SIGNAL Frequency meter and Tachometer

<b>Frequency Limits</b>	
MIN frequency	0.01 Hz
MAX frequency without totalizer	19 KHz
MAX frequency with totalizer	9.9 KHz

#### Counter

<b>MAX count rate (*)</b>	
Up or down without relays	20 KHz
Up or down with relays	15 KHz
Bidirectionnal Phase or Direc without relays	20 KHz
Bidirectionnal phase or Direc with relays	15 KHz
Bidirectionnal Indep without relays	20 KHz
Bidirectionnal Indep with relays	15 KHz

<b>EXCITATION</b>	8 V/24 V DC @ 30 mA
	18 Vdc (not stabilized) @ 100 mA

#### CONTACT CLOSURE FILTER

Fc with duty cycle 50%	20 Hz
Fc with duty cycle 30%	10 Hz

#### INPUTS (2 CHANNELS) MAGNETIC PICKUP

Sensitivity	Vin (AC) > 60 mVpp @ F < 1kHz >120 mVpp @ F >1 kHz
-------------	-------------------------------------------------------

#### NAMUR

Rc	3k3 (incorporated)
Ion	< 1 mA DC
Ioff	> 3 mA DC

# FREQUENCY, PULSE COUNTER, TACHOMETER, DISPLAY

TTL/24V DC (encoder)  
Logic levels "0" < 2.4 V DC, "1" > 2.6 V DC

NPN or PNP  
Rc 3K3 (incorporated)  
Logic levels "0" < 2.4 V DC, "1" > 2.6 V DC

CONTACT CLOSURE  
Vc 5 V  
Rc 3.9 K  
Fc (activated automatically) 20 Hz

## HIGH VOLTAGE INPUT (1 CHANNEL)

Voltage limits (10 to 300) V AC

## COUNTER IN CHRONOMETER MEMORY

Non-volatile E2PROM retains all programming data and count value when power is removed or interrupted.

## DISPLAY

Type 5 programmable tricolor 14 mm digits  
LED's 8, control and status indication  
Decimal Point programmable  
Sign automatic s/configuration  
Positive overflow indication *ouer*  
Negative overflow indication *-ouer*

Counter display limits Process -99999 to 99999  
Totalizer -99999999 to 99999999  
Chronometer ranges 4, from 999.99 s to 9999.9 h  
Frequency ranges 0.01 Hz to 20 KHz/10 KHz(totalizer)  
Tachometer range 0 to 99999(rpm), programmable (rate)  
Scale factor  
Counter programmable from 0.0001 to 99999  
Freq/Tach programmable from 0.0001 to 99999

Display update rate  
Counter 100 ms  
Chronometer 100 ms  
Frequency/Tachometer programmable 0.1 to 9.9 s

## POWER

DM4500/S1 (85 to 265) VAC, (100 to 300) VDC  
DM4500/S2 (22 to 53) VAC, (10.5 to 70) VDC

Consumption 5 W (without options), 10 W max

## ACCURACY

Frequency/Tachometer 0.005 %  
Chronometer 0.01 %  
Temperature coefficient 50 ppm/°C  
Warm up time 5 minutes

## AMBIENT

Indoor use  
Operating temp. (-10 to 60) °C  
Storage temperature (-25 to 85) °C  
Relative humidity (non condensing) < 95 %  
Max altitude 2000 m

## Relay Option

CHARACTERISTICS	OPT4500/2RLY	OPT4500/4RLY
MAX.CURRENT (RESISTIVE LOAD)	8 A	5 A
MAX.POWER	2000 VA / 192 W	1250 VA / 150 W
MAX.VOLTAGE	250 VAC / 150 VDC	277 VAC / 125 VDC
CONTACT RESISTANCE	Max. 3 mΩ	Max. 30 mΩ
SWITCHING TIME	Max. 10 ms	Max. 10 ms

## NPN / PNP Option

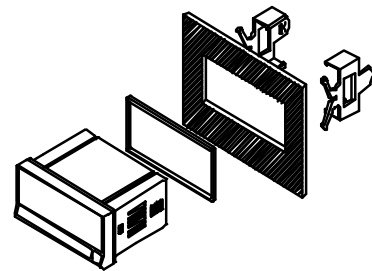
CHARACTERISTICS	
MAX VOLTAGE	50 VDC
MAX CURRENT	50 mA
LEAKAGE CURRENT	100 μA (max.)
SWITCHING TIME	1 ms (max.)

## mA / V Option

CHARACTERISTICS	OPT4500/MA OUTPUT	OPT4500/V OUTPUT
RESOLUTION	13 BITS	13 BITS
ACCURACY	0.1% F.S. ±1BIT	0.1% F.S. ±1BIT
RESPONSE TIME	50 ms	50 ms
THERMAL DRIFT	0.5 μA/°C	0.2 mV/°C
MAXIMUM LOAD	<= 500 Ω	>=10 KΩ

## MECHANICAL DETAILS

Dimensions (96x48x60) mm (DIN 43700)  
Panel cut out (92x45) mm  
Weight 200 g  
Case material Polycarbonate (UL 94 V-0)  
Sealed front panel IP65



# FREQUENCY, PULSE COUNTER, TACHOMETER, DISPLAY

---

## ORDER CODE

DM4500F	/	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>	/	<input type="text"/>
<b>POWER SUPPLY</b>								
(85 to 265) V AC (50 to 60) Hz or (100 to 300) V DC		S1						
(22 to 53) V AC (50 to 60) Hz or (10.5 to 70) V DC		S2						
<b>ANALOGUE OUTPUT</b>								
(4 to 20) mA		A						
(0 to 10) V		V						
None		0						
<b>RELAYS &amp; OPTO OUTPUT</b>								
2 x Relays SPDT 8 A						2		
4 x Relays SPST 5 A						4		
4 x NPN						N		
4 x PNP						P		
None						0		
<b>COMMUNICATION OUTPUT</b>								
Serial 485								C
None								0

Example: DM4500F/S1/A/4/0 = DM4500F Frequency Display with the (85 to 265) V AC (50 to 60) Hz or (100 to 300) V DC Supply, (4 to 20) mA Output, 4 x Relays Output without Comms.