2704MP

MODEL

Ideal for :

- **Photographic film**
- **Solid extrusion**
- **Wire coating**
- **Multi-layer**

Features :

- **Melt Pressure control**
- **Suitable for 4 or 6 wire transducers**
- **Pre-screen pressure monitor and alarm**
- **Pressure alarms**
- **Simple calibration**
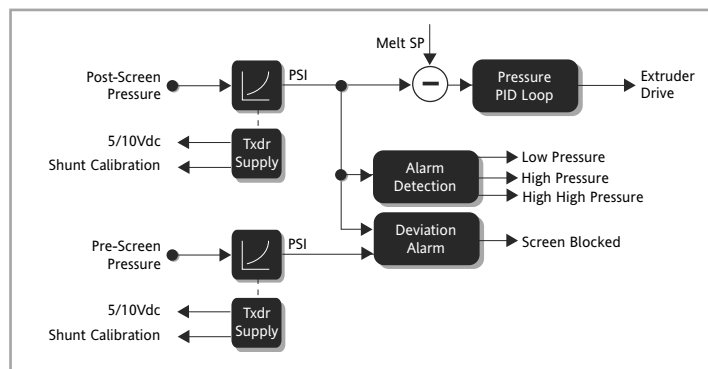- **Field communications options**

Extrusion Melt Pressure
Specification Sheet

The 2704MP is a fully programmable melt pressure controller, suitable for precision pressure control in the plastic extrusion industries.

In its basic format the 2704MP standard hardware includes an input for melt pressure measurement, an analogue output to drive the extruder screw and alarms to detect high and low pressure conditions. Additionally, a second pressure input can be connected providing the facility to provide a differential pressure alarm across the screen. Automatic transducer calibration procedures and 5Vdc or 10Vdc transducer power supplies are provided for both inputs.

For standard applications, controllers are shipped pre-configured to the users specification, using a simple to complete order code. User customisation can be achieved by reconfiguring the controller via its front panel interface or Eurotherm's iTools configuration software.
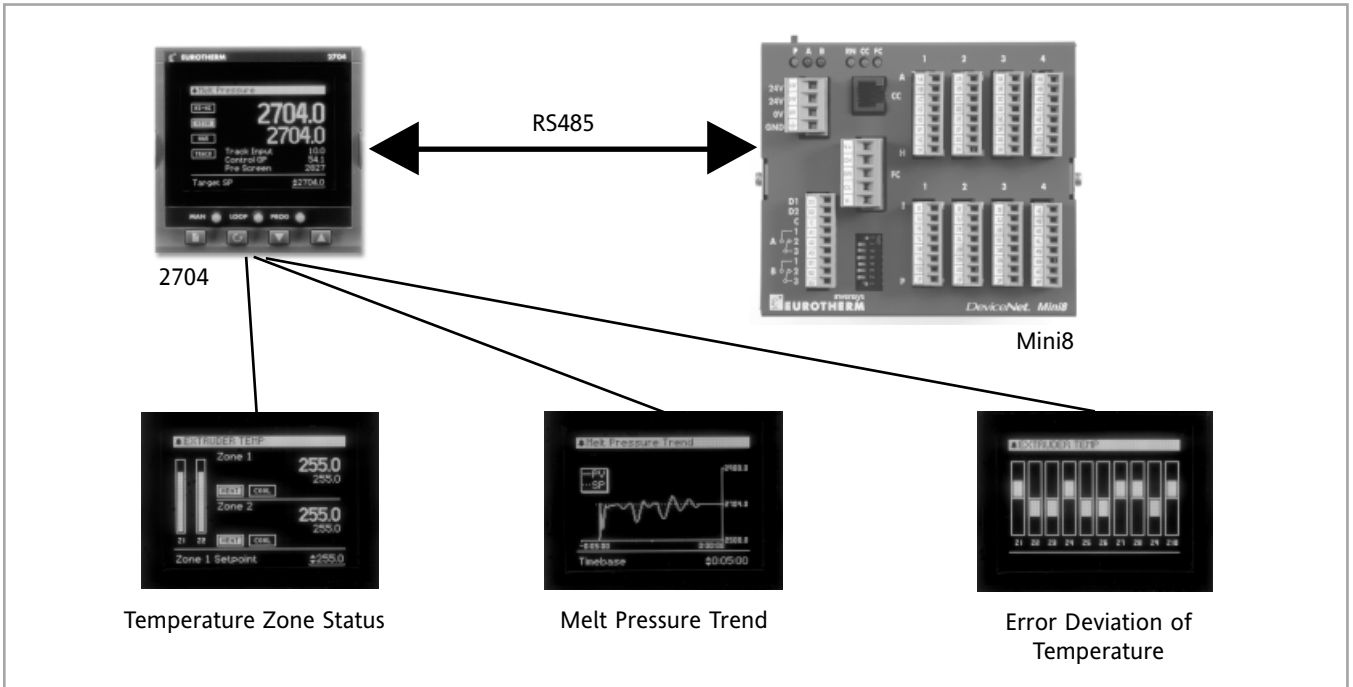
The 2704MP is fully compatible with the standard 2704 process controller; data sheet number HA026669.

Extrusion control system

In combination with the Mini8 DIN rail controller, a very powerful low cost extrusion control system can be implemented. The 2704MP acts as the master melt pressure controller. It also provides an operator interface to view parameters and change setpoints of the temperature zones implemented in the Mini8. Each Mini8 base unit can implement up to 8 control loops. 10 temperature zones can easily be displayed and supervised by the 2704MP. Additionally, extra parameters such as extruder Amps and RPM can be measured by the Mini8 and displayed on the 2704MP. For more information on the Mini8 please refer to data sheet number HA028480.

2704 ← RS485 → Mini8

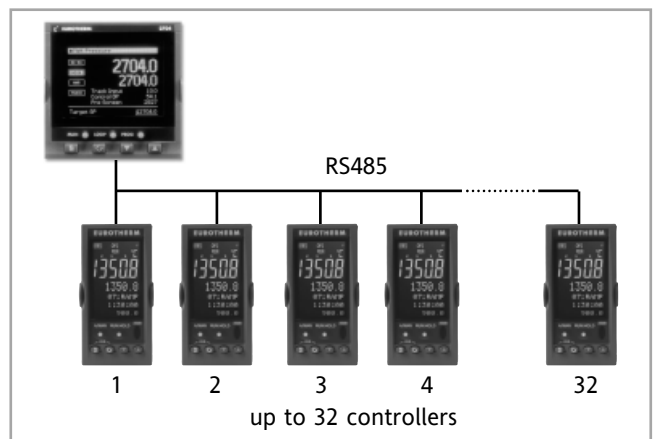Temperature Zone Status   Melt Pressure Trend   Error Deviation of Temperature

2604 Controller

A 2604MP is also available providing the basic melt pressure functions offered by the 2704MP. It has a simpler, less configurable display; suitable in applications where the more informative 2704MP display or communication to slave controllers is not required.
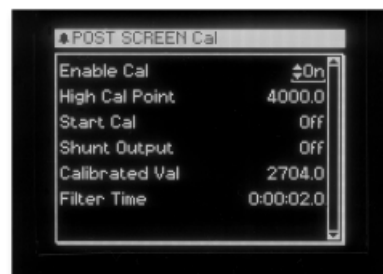

3508 Slave Controllers

The 2704 can be used as a master to a number of model 3508 slave temperature controllers. Each 3508 can switch up to 29 setpoints by using the multiplexor blocks. Setpoints can be selected automatically via the 2704MP user interface, therefore providing a simple recipe management system.

RS485

1   2   3   4   32

up to 32 controllers

Transducer calibration

The input signals and display range can be specified at time of order to suit the measurement range.

Following installation, the operator can then perform a user shunt calibration. Gain and offset adjustments are simply made by initiating an automatic calibration routine using the front panel operator interface. The 2704MP can accommodate transducers with or without an incorporated calibration resistor.

Pressure alarms

Four alarms are pre-configured and ready for use. A high alarm, high-high and low alarm for the main melt pressure measurement and a differential alarm between the two pressure measurements to indicate blockage of the screen. The output of this alarm can be used to initiate an automatic screen change.
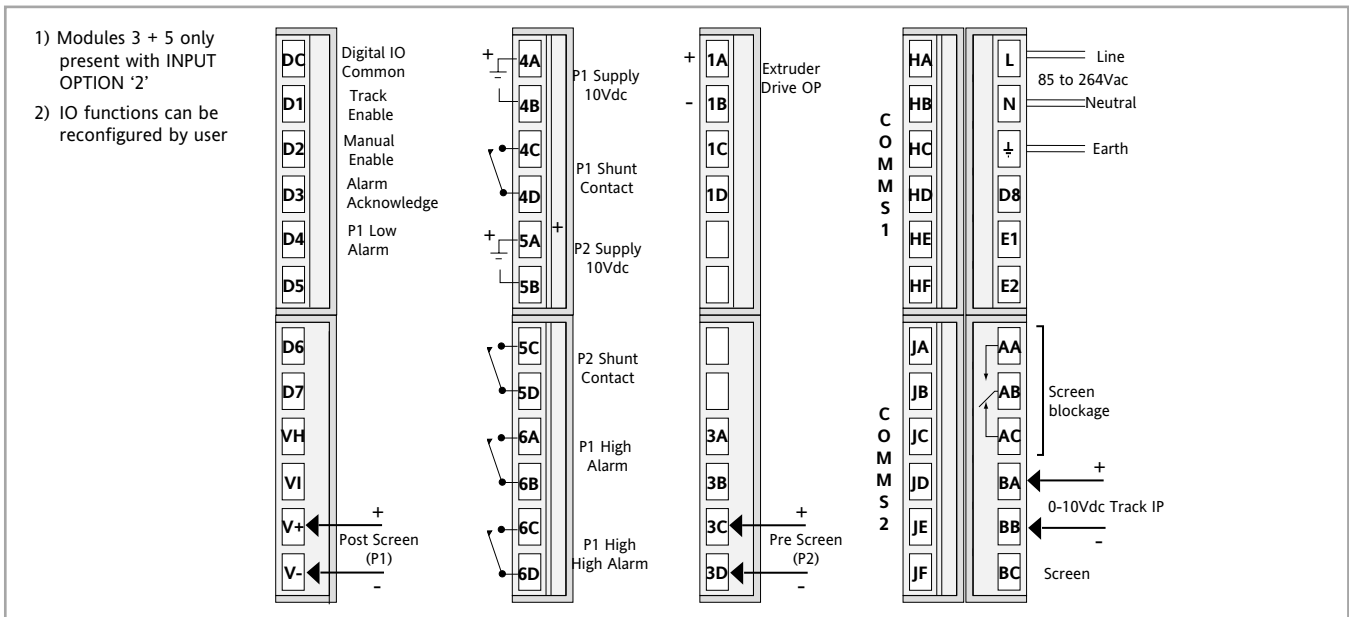

Field communications

The modular build of the 2704 provides the user with a selection of communication protocols. Modbus RTU, Profibus and DeviceNet are all available for connection to supervisory computers or programmable logic controllers.

Additionally, a Modbus master port can be used to communicate to a host of devices including Series 2000 temperature controllers.
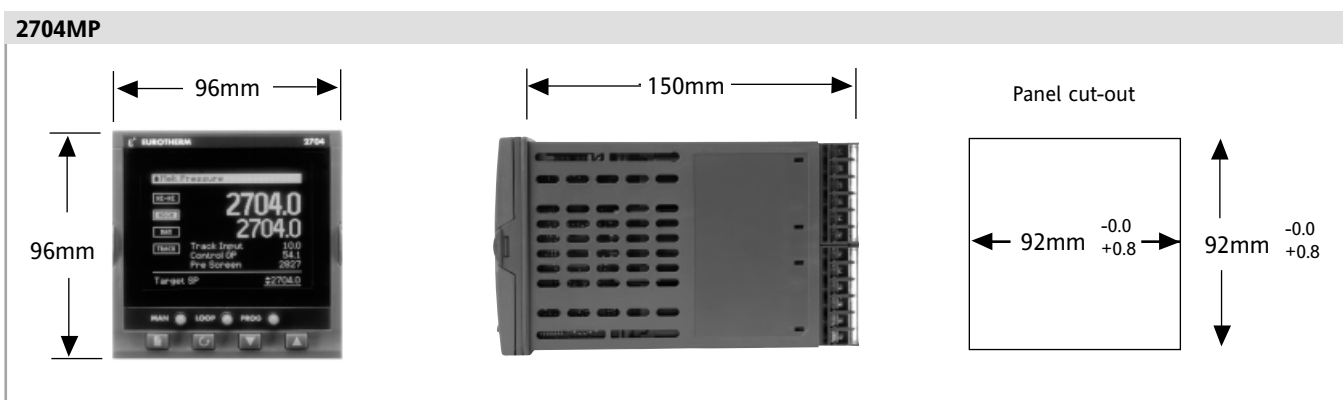
Start up options

When the controller is powered up the control output can be set to start up in manual mode with a minimum output power demand. The operator can then increase the extruder speed using the front panel operator interface. Alternatively, the instrument can start up in track mode, where the control output is modified directly via an external 0-10Vdc input. Transition from both manual and track to automatic mode is bumpless.

REAR TERMINAL CONNECTIONS

1) Modules 3 + 5 only present with INPUT OPTION '2'

2) IO functions can be reconfigured by user

DIMENSIONAL DETAILS

2704MP

96mm

96mm

150mm

Panel cut-out

92mm -0.0 +0.8

92mm -0.0 +0.8

ORDERING CODE

Controller Type	Supply Voltage	Pressure Inputs	Input 1 mV Elec Low	Input 1 mV Elec High	Input 1 Eng Low	Input 1 Eng Low	Input 1 Units	Input 2 mV Elec Low	Input 2 mV Elec High	Input 2 Eng Low	Input 2 Eng Low	Input 2 Units

Control Output	H Comms Slot	J Comms Slot	Manual	Toolkit Blocks

Controller Type

2604MP	2604 Standard
2604MPf	2604 Profibus
2704MP	2704 Standard
2704MPf	2704 Profibus

Supply Voltage

VH	High voltage
VL	Low voltage

Pressure Inputs

1	1 Input
2	2 Inputs

Input 1 mV Elec Low

Enter low mV value
i.e. 0.0

Input 1 mV Elec High

Enter High mV value
i.e. 30.0

Input 1 Eng Low

Enter low units value
i.e. 0.0

Input 1 Eng Low

Enter High units value
i.e. 5000.0

Input 1 Units

PSI	PSI Units
BAR	BAR Units

Input 2 mV Elec Low

Enter Low mV value
i.e. 0.0

Input 2 mV Elec High

Enter High mV value
i.e. 30.0

Input 2 Eng Low

Enter Low units value
i.e. 0.0

Input 2 Eng Low

Enter High units value
i.e. 5000.0

Input 2 Units

PSI	PSI Units
BAR	BAR Units

Control Output

4mA20	4-20mA
0mA20	0-20mA
0V10	0-10Vdc
0V5	0-5Vdc
4mA20	4-20mA
1V5	1-5Vdc

H Comms Slot

XX	Not fitted
A2	232 Modbus
Y2	2 Wire 485 Modbus
F2	4 Wire 485 Modbus
AE	232 Bisync
YE	2 Wire 485 Bisync
FE	4 Wire 485 Bisync
PB	Profibus
DN	DeviceNet

J Comms Slot

XX	Not fitted
A2	232 Modbus
Y2	2 Wire 485 Modbus
F2	4 Wire 485 Modbus
M1	232 Master
M2	2 Wire 485 Master
M3	4 Wire 485 Master

Manual

ENG	English
FRA	French
GER	German

Toolkit Blocks

XX	Standard
U1	Toolkit level 1
U2	Toolkit level 2

Notes:
1. Basic controller includes 8 digital registers, 4 timers and 4 totalisers. Standard configuration uses some timers and logic registers.
2. Toolkit 1 includes 16 analogue, 16 digital, pattern generator, digital programmer, analogue switch and 4 user values.
3. Toolkit 2 includes Toolkit plus extra 8 analogue, 16 digital and 8 user values.
4. Max. electrical input range 0 to 80mV.
5. Max. display range -9999 to 99999.
6. Specify decimal points as for instance XXX.XX. 0 to 3 can be requested.

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