

PS660 Irrigation Control Panel

ss6404
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catalogue section 30



Description

The PS660 is a microprocessor-based control, instrumentation and protection system for engine-driven irrigation pumps. The system provides all the features of the Murphy mechanical 33.400.689 panels (see bulletin ss6254), plus automatic engine throttling to maintain a set pump pressure.

Model B6452 is a flat-panel design for mounting in an acoustic enclosure. The panel includes a PS660 control module, an on/off power keyswitch, supply fuses, output slave relays and a 2 metre wiring harness with screw terminal connector strip.

Model B6453 has the same control features, but is supplied in a weatherproof, lockable enclosure, complete with emergency stop push button and a clear window for viewing the control module display. Electrical connection is via a screw terminal strip inside the panel.

Operator control of both panels is through the PS660 control module. 5 push keys – Stop, Start, Mode, ▽ and △ – allow engine starting and stopping, selection of Idle or Duty running modes, and the decrease/increase of run time, target speed (in Idle mode) or target pressure (in Duty mode).

Pump shutdown, with an optional 'cooldown' delay, can be by manual operator control, or can be automatic after expiry of an operator set 'run' time, or following a pump 'no-flow' condition or an engine/pump fault.

The PS660 control module has a 32 character backlit LCD for the display of operating mode, target pump speed/pressure, actual pump pressure, engine speed/oil pressure/coolant temp/hours run, and time delays. Front facia LEDs indicate warning and shutdown conditions.

Warranty

A two year limited warranty on materials and workmanship is given with this product. Full details are available at www.fwmurphy.co.uk/warranty



- **Manual start/stop of engine-driven irrigators**
- **Automatic shutdown by timer, 'no flow' or engine/pump fault**
- **Automatic throttling to operator-set speed or pressure**
- **Weatherproof enclosure or flat-panel options**

Product specification

Power supply:	
operating voltage: steady state range	5 – 40 V DC continuous
crank brown-out	to 0 V for $\geq 100\text{mS}$
current consumption: standby (typ)	95mA @ 12V, 55mA @ 24V
cranking (typ)	280mA @ 12V, 170mA @ 24V
Inputs:	
engine oil pressure & engine coolant temperature	Murphy resistive senders (see 'accessories' below), or fault switches, wired to negative DC
pump water pressure	4 – 20 mA / 0 – 600 psi transmitter
no flow, aux input 1 shutdown and aux input 2 warning	switch contacts, closing to negative DC on fault
magnetic pickup:-	
voltage range	2.5 – 25 V AC rms
frequency measurement range	0 – 10 kHz.
engine RPM display accuracy	$\leq 2\%$ of full scale
engine RPM display resolution	10 RPM
Outputs: <i>(all ratings for resistive load)</i>	
start, fuel and preheat:	positive DC, switched relay:
B6452/B6453 slave relays	30 Amp @ 24V DC (per output), or 40 Amp @ 24V DC (combined outputs).
control module 41.70.012€	8 Amp @ 24V DC (per output), or 8 Amp @ 24V DC (combined outputs).
throttle up, throttle down and common alarm	negative DC (semiconductor), 500 mA max. @ 33 V DC
Physical:	
dimensions (W x H x D), weight	
enclosed panel (B6453)	400 x 500 x 240 mm, 17.5 Kg
open chassis (B6452)	362 x 384 x 195 mm, 3.9 Kg
control module (41.70.0126)	144 x 96 x 160 mm, 750 g
operating ambient temperature	-10 to +55 °C
Accessories supplied:	
magnetic pickup, 68.MP.0058	5/8" x 18 UNF, 48mm long
oil pressure sender, 00.00.3042	0-100 psi, 1/8" NPT, 2 wire
engine temp sender, 10.09.0051	0-150°C, 5/8" UNF, 2 wire
pump pressure transducer, PXT600	0-600 psi, 4-20mA, 1/4" NPTF

Operating parameters

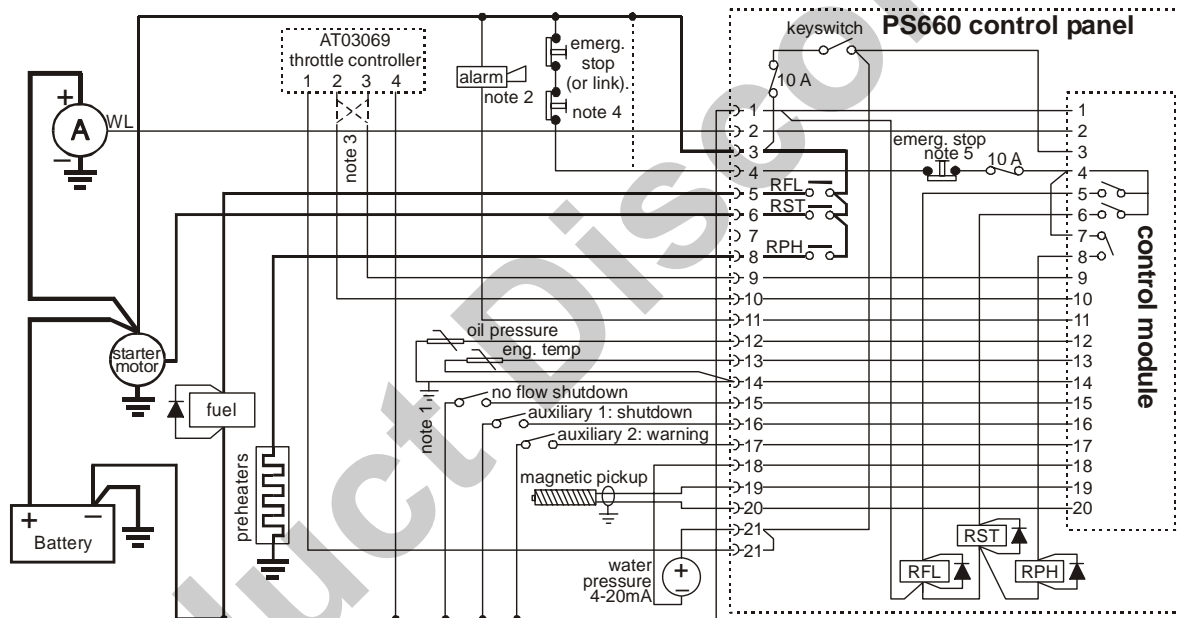
Function	setting range/options
Non-adjustable	
engine crank/rest time	10 sec (max) crank, 5 sec rest
start attempts	3 (max)
automatic crank release	500 RPM
charge alt. (WL) fail voltage	10V
Adjustable (in normal operation)	
run time	1 min to 48 hrs, or 'constant'
target speed (idle mode)	min = 500 RPM, max = 4000 RPM or overspeed level minus 500 RPM
target pressure (duty mode)	50 to 550 psi
Adjustable (in program mode)	
preheat time	0, 5, 10 or 15 seconds
engine override time	3 – 60 sec (1 sec steps)
pump override time	10 sec to 60 min (1 sec steps)
cooldown time	0 sec to 10 min (1 sec steps)
oil pressure sensor	sender & trip level, or switch type
coolant temp sensor	sender & trip level, or switch type
overspeed shutdown	1000 – 4000 RPM
pressure units	PSI, BAR or OFF
pump high & low pressure shutdown	50 – 550 psi (10 psi steps) or 3 – 39 bar (0.5 bar steps)
throttle deadband	0-500 RPM (idle) / 0-200 psi (duty)
throttle up/down rate	1 (slow) to 5 (fast)

Electrical connection

Panel electrical connection is via a screw terminal strip. On model B6452, the terminal strip is at the end of a 2m wiring harness; on model B6453, the terminal strip is fixed inside the weatherproof enclosure. The terminal numbering for panel versions and control module is as follows:-

1	Battery negative power supply
2	Charge alternator WL
3	Battery positive power supply, 5 to 40 VDC
4	Battery positive relay feed / emergency stop
5	Fuel output, positive DC
6	Starter (crank) output, positive DC
7	- No panel connection - (+ve feed for preheat on control module)
8	Preheat output, positive DC
9	Throttle up output, negative DC (transistor, 500mA max)
10	Throttle down output, negative DC (transistor, 500mA max)
11	Common alarm output, negative DC (transistor, 500mA max)
12	Oil pressure resistive sender ground
13	Engine temp resistive sender
14	Sender common return/ground
15	No flow input: shutdown (close to negative to activate)
16	Auxiliary 1 input: shutdown (close to negative to activate)
17	Auxiliary 2 input: warning only (close to negative to activate)
18	Pump pressure 4 – 20 mA (0 – 600 psi) transducer negative
19	Magnetic pickup speed input negative
20	Magnetic pickup speed input positive
21	Battery positive keyswitch output (2 terminals provided)

Typical connection



How to order

stock code model / description

B6452	PS660 irrigation panel, flat-panel version, supplied complete with:- - 68.MP.0058 magnetic pickup - 00.00.3042 100 psi oil pressure sender - 10.09.0051 150°C engine temp sender - PXT600 pump pressure 4-20mA transmitter
B6453	Weatherproof enclosure version of above.
B6452-D	Dirty water versions of above, with diaphragm on PXT600 transmitter
B6453-D	Dirty water versions of above, with diaphragm on PXT600 transmitter
41.70.0126	PS660 control module only

Further information

document	description
si6396	PS660 installation and operation
ys6336	magnetic pickup sales bulletin
00-02-0181	magnetic pickup installation
ys6347	EG(S) electric gauge and ES sender bulletin
EG21-96048N	EG/ES series installation
PXT-01041B	PXT pressure transducer sales bulletin
PXT-01044N	PXT pressure transducer installation

Further information on our range of irrigation control equipment is available at www.fwmurphy.co.uk/irrigation



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USA - ISO9001:2000 FM 28221
UK - ISO9001:2000 FM 29422