

PS640 Irrigation Control Panel

ss6367
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catalogue section 30



Description

The PS640 is a control, instrumentation and protection system for engine-driven irrigation pumps. The system provides all the features of the traditional Murphy 33.400.689 panels (see bulletin ss6254) but in a compact microprocessor-based package.

The PS640 uses a weatherproof, painted metal enclosure: a clear window permits viewing of the main control module, with operator control buttons, LCD display of engine/pump parameters and LED indication of fault warning or shutdown.

The PS640 can be used with a 12 or 24 VDC battery supply. Electrical connection is by a screw terminal strip, located at the base of the panel under a removable cover (see 'typical connection' overleaf).

Operation

Operator control of the panel power supply is through an OFF-ON security keyswitch on the enclosure side. A 10 Amp supply fuse and mechanically latching emergency stop push-button are also fitted.

Automatic engine start is triggered by remote closing contact, or by operator control from the front fascia control module. The engine may be stopped by the operator at any time, or automatically after a preset Run time, or automatically in the event of an engine/pump fault.

User-adjustment of operating options is possible by selection of 'program' mode - see 'operating parameters' overleaf. A speed calibration mode provides automatic set-up of engine RPM display and starter motor release.

The panel is supplied with engine oil pressure and coolant temperature senders, plus a magnetic pickup speed transducer. A 4 – 20mA / 0 – 600 psi pump pressure transducer is additionally required (not supplied).

Full installation and setup instructions are provided with each panel.

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- **Automatic or manual start/stop of engine-driven irrigators**
- **Automatic shutdown by timer, engine/pump fault or 'no flow'**
- **Measurement and display of engine and pump parameters**
- **Rugged, weatherproof enclosure**

Product specification

Power supply:	
operating voltage: steady state range	5 – 40 V DC continuous
crank brown-out	to 0 V for >=100mS
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), wired to negative DC
pump water pressure	4 – 20 mA (0 – 600 psi) transmitter (not supplied)
no flow and common shutdown	switch contacts, closing to negative on fault
magnetic pickup:-	
voltage range	2.5 – 25 V AC rms
frequency measurement range	0 – 10 kHz.
engine RPM display accuracy	<= 2% of full scale
engine RPM display resolution	10 RPM
Outputs:	
<i>(all ratings for resistive load)</i>	
start, fuel and preheat relays	positive DC (switched relay) combined rating 8 A max @ 24VDC
warning and shutdown	negative DC (semiconductor) 500 mA max. @ 33 V DC
Physical:	
overall dimensions (W x H x D)	350 x 235 x 220 mm
weight (approx.)	6.8 Kg
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 – 100psi, 1/8" NPT, 2 wire
engine temp sender, 10.09.0051	0 – 150°C, 5/8" UNF, 2 wire

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

Operating parameters

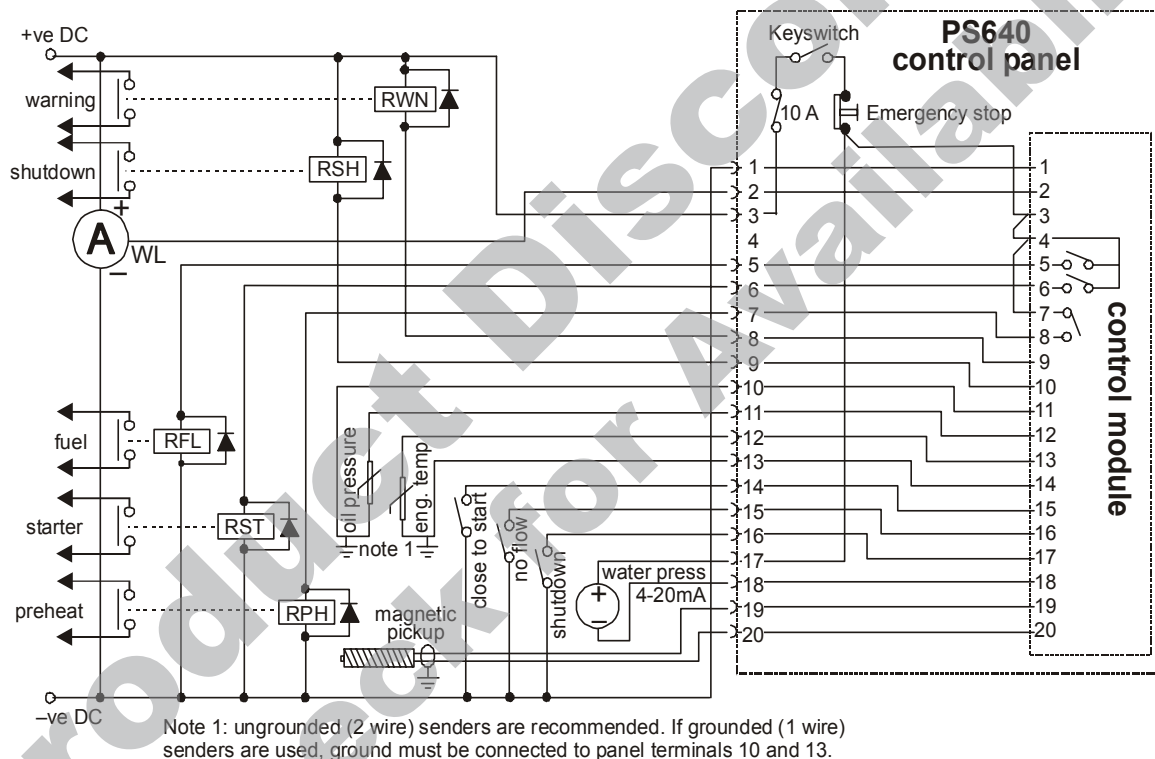
Function	setting range/options
Non-adjustable	
engine crank/rest time	10 sec (max) crank, 5 sec rest
start attempts	3 (max)
automatic crank release	500 RPM
low oil pressure shutdown	< 20 psi
high coolant temp. shutdown	> 98 °C
charge alt. (WL) fail voltage	10V
Adjustable (in program mode)	
preheat time	0, 5, 10 or 15 seconds
override time, low oil pressure	3 – 60 sec (1 sec steps)
pressure display units	psi or bar
pump high pressure shutdown	50 – 550 psi (10 psi steps) or 3 – 39 bar (0.5 bar steps)
pump low pressure shutdown	50 – 550 psi (10 psi steps) or 3 – 39 bar (0.5 bar steps)
pump override, low pressure	10 sec to 15 min (1 sec steps)
run time	1 min to 24 hrs (1 min steps)
Automatic (in speed calibration mode)	
magnetic pickup flywheel teeth (calculated in speed calibration mode, after user entry of engine running RPM)	

Electrical connection

Electrical connection is through a screw terminal strip, located under a cover at the enclosure base. Terminal numbering is:-

1	Battery negative power supply
2	Charge alternator WL
3	Battery positive power supply, 5 to 40 VDC
4	- No connection -
5	Fuel output, positive DC
6	Crank (start) output, positive DC
7	Preheat output, positive DC
8	Warning output, negative DC, 500mA max.
9	Shutdown output, negative DC, 500mA max.
10	Oil pressure resistive sender ground
11	Oil pressure resistive sender
12	Engine temp resistive sender
13	Engine temp resistive sender ground
14	Remote start input, close to negative to activate
15	No flow shutdown input, close to negative to activate
16	Common shutdown input, close to negative to activate
17	Pump pressure 4 – 20 mA (0 – 600 psi) transducer positive
18	Pump pressure 4 – 20 mA (0 – 600 psi) transducer negative
19	Magnetic pickup speed input negative
20	Magnetic pickup speed input positive

Typical connection



How to order

stock code model / description

B6426 PS640 irrigation panel, complete with:-
 - **68.MP.0058** magnetic pickup
 - **00.00.3042** 100 psi oil pressure sender
 - **10.09.0051** 150°C engine temp sender

Optional accessories:-

PXMS-600 4–20mA/0–600psi water pressure transducer

Further information

document	description
si6368	PS640 installation instructions
ys6336	magnetic pickup bulletin
ys6347	electric gage and sender bulletin
PXM-94090B	PXMS pressure transducer bulletin

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

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