

AUTOSTART 720 (AS720S series)

PROGRAMMABLE GENERATOR CONTROLLER




The Autostart 720 controller has been designed specifically for the needs of automatic mains fail generator applications. The unit has all the control features of the Autostart 710, plus mains voltage monitoring and contactor control.

Key features

- Automatic, Manual and Test modes, keyswitch selectable
- 32 character, back-lit liquid crystal display (LCD), showing operating mode, system status, timer information, generator RPM/Hz., oil pressure and engine temperature
- Full programmability of generator control options, timers, trip levels, fault/alarm settings, input/output configurations
- Comprehensive fault protection and alarm system:- low oil pressure and high engine temperature alarms (using analogue or switch sensors), engine overspeed and underspeed, emergency stop, start fail, charge fail, high and low battery voltage, 3 programmable fault inputs.
- Monitoring and display of mains voltage, and control of mains contactor, with fully programmable mains fail and restore voltage levels
- 7 programmable outputs, each configurable to one of over 40 function types
- Universal 12 or 24 V DC power supply

Operation

The Autostart 720's operating mode is selected by use of a 4 position keyswitch:-

- Off/reset. Removes power from the unit, stopping the engine and resetting a latched fault condition.
-  Automatic start-up, load transfer and return to standby in response to a mains fail or remote start condition.
-  Manual start and stop of the generator, either immediately on selecting manual mode or by use of remote push button switches.
-  Immediate, automatic test run of the generator, with or without load transfer to generator.

The key is common to all units and is removable in the Off and Auto positions only. Operating mode is indicated by LEDs around the keyswitch: green for Auto, amber for Manual, red for Test.

Control Outputs

The following outputs are provided:-

- Single pole, switched +ve relay outputs for the control of engine fuel and starter motor circuits.
- Switched +ve outputs for signalling auto and manual modes, plus a -ve DC output for Off/reset.
- 7 function programmable outputs (see overleaf).

Fault Protection and Alarm System

In Auto, Manual or Test modes, the Autostart will shut down and latch out the generator on detection of low oil pressure, high engine temperature, overspeed, start fail or emergency stop faults. The Autostart may also be set to shut down the generator on detection of a low generator speed/frequency. 3 additional inputs may be programmed for use as fault channels, or to trigger other functions such as 'display only', 'manual restore', 'test with load', etc.



Product Specification

Power supply:

Operating voltage: steady state range	5 – 40 V DC continuous
crank brown-out	to 0 V for <= 100 mSec
Current consumption	typically 150 mA

Inputs:

DC inputs (inputs 1 - 5, remote start)	
positive input voltage range	80% to 100% of battery +ve
negative input voltage range	-1V to +2V w.r.t. battery -ve
Mains AC inputs:	
operating voltage range	0 – 300 V AC rms L-N
voltage display accuracy	<= 2% of full scale
voltage display resolution	1 VAC rms L-N
Generator AC inputs:	
operating voltage range	90 – 300 VAC
frequency measurement range	0 – 99 Hz.
frequency display accuracy	<= 2% of full scale
frequency display resolution	1 Hz.
Magnetic pickup:	
operating voltage range	7 – 80 V AC rms
frequency measurement range	0 – 10 kHz

Outputs:

(all ratings for resistive load)

Start and fuel relays	+ ve DC (switched SPNO contact) rated 16 A max. @ 24 V DC
Programmable outputs 1 – 3	- ve DC (open collector transistor) rated 250 mA max. @ 33 V DC
Programmable output 4	- ve DC (switched SPNO contact) rated 5 A max. @ 24 V DC
Programmable output 5 (default setting: Common Alarm)	+ ve DC (switched SPNO contact) rated 5 A max. @ 24 V DC
Programmable outputs 6 (default setting: Gen. contactor)	volt free SPNO contacts rated 5A max. @ 240V AC
Programmable output 7 (default setting: Mains contactor)	volt free SPNC contacts rated 5A max. @ 240V AC
Auto & Manual outputs	+ ve DC, 250 mA max.
Off/reset output	- ve DC, 250 mA max.

General:

Overall dimensions (W x H x D)	96 x 96 x 162 mm
Panel cut-out size	DIN standard 92 x 92 mm
Weight	approx. 700 g
Operating ambient temperature	-10 to +55 °C

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.

Non-latching, 'warning only' alarms are fitted for high and low battery volts, charge fail and magnetic pickup failure conditions.

Programmable functions

The connection of a Modex hand held key-pad unit into the rear of an Autostart allows the setting of over 30 programmable functions. One key-pad may be used to set up any number of Autostarts: without this key-pad, the end-user is unable to tamper with the programmable settings.

The programmable functions include all those found on the Autostart 710 – timers, fault protection and alarm configurations, trip levels and programmable inputs and outputs – plus the following mains supply and contactor control functions:–

- Mains fail and mains return trip voltages
- Contactor delay. Sets a minimum delay between the release of one contactor (mains or generator) and the activation of the other or same contactor. This feature may be required for loads with rotating machinery.
- Additional programmable input functions for 'mains fail inhibit' (allowing use with multiple sets and mutual standby generators) and 'test on load'.

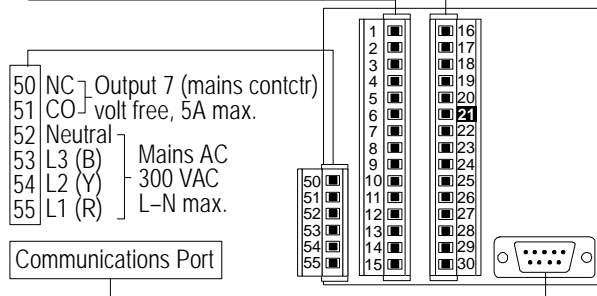
When ordering, please specify:-

Generator AC voltage:-
 D = 230 VAC
 C = 110 VAC

AS720SK -

Rear Facia & Electrical Connection

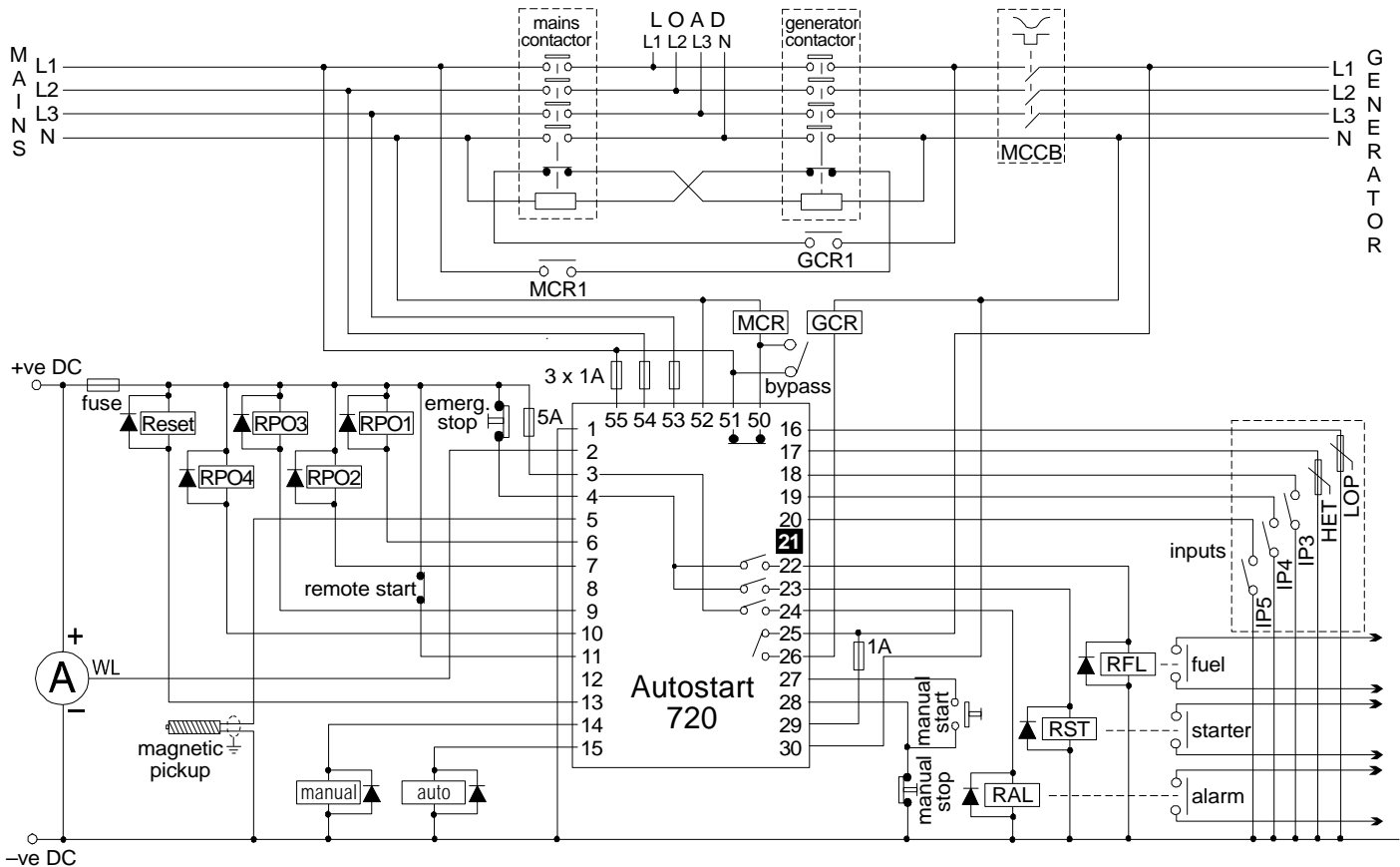
1	- ve DC supply	5 - 40 VDC	16	Input 1: low oil pressure
2	Charge fail input		17	Input 2: high engine temp.
3	+ ve DC power supply		18	Input 3: programmable
4	+ ve DC (relays)/Emerg. stop		19	Input 4: programmable
5	Magnetic pickup input		20	Input 5: programmable
6	Output 1	- ve DC	21	Index Pin
7	Output 2	250 mA max	22	Fuel output
8	A800 enable output		23	Starter output
9	Output 3	- ve, < 250mA	24	Output 5 (alarm): + ve, < 5A
10	Output 4: - ve DC, 5 A max.		25	NO Output 6 (gen. conctr)
11	Remote start/mains fail input		26	CO Output 7 (mains conctr)
12	- No connection -		27	Man. Start
13	Off output: - ve, < 250mA		28	Man. Stop
14	Manual output	+ ve DC	29	Live
15	Auto output	250mA max.	30	Neutral



Accessories:-

AS7PROG AS710/720 hand-held programmer unit.

Typical Connection



FRANK W. MURPHY
 Since 1939 MFR.
 Frank W. Murphy Manufacturer
 PO Box 470248, Tulsa, Oklahoma 74147, USA
 Tel: + 1 918 627 3550 Fax: + 1 918 664 6146
 email: sales@fwmurphy.com
 web: http://www.fwmurphy.com

Frank W. Murphy Ltd.
 Incorporating Modex Automation
 Church Road, Laverstock, Salisbury U.K.
 Tel: + 44 1722 410055 Fax: + 44 1722 410088
 Pour service en Français, tél: + 44 1722 410697
 email: sales@fwmurphy.co.uk
 web: http://www.fwmurphy.co.uk

Frank W. Murphy Pte. Ltd.
 No. 2 Tuas South Street 2, Sprintex Building
 02-01/02, Singapore 637895
 Tel: + 65 863 1398 Fax: + 65 863 0208
 email: fwmurphy@fwmurphy.com.sg

Frank W. Murphy Southern Division
 PO Box 1819, Rosenberg, Texas 77471, USA
 Tel: + 1 281 342 0297 Fax: + 1 281 341 6006
 email: sales@fwmurphy.com
 Murphy Switch of California
 41343 12th Street West, Palmdale, CA 93551, USA
 Tel: + 1 661 272 4700 Fax: + 1 661 947 7570
 email: sales@murphyswitch.com
 web: http://www.murphyswitch.com

Macquarrie Corporation
 1620 Flume Highway, Campbellfield, Vic. 3061 Australia
 Tel: + 61 3 9393 5555 Fax: + 61 3 9358 5558
 email: murphy@macquarrie.com.au
 Murphy de Mexico S.A. de C.V.
 Blvd. Antonio Rocha Cordero 300, Fracción del Aguaje
 San Luis Potosí, S.L.P. México 78384
 Tel: + 52 48 206264 Fax: + 52 48 206336
 email: murmexsl@sanluis.podernet.com.mx