GSP

GSP MAXI-POWERPACK (GSP 140 V) discontinued !

phytron

Stepper Motor Power Pack with Axis Controller

GSP Stepper Motor Power Pack

The GSP power pack is an 'intelligent' drive for two-phase stepper motors. The GSP vario power pack is designed for stepper motors up to 9 A_{PEAK} (70 V motor voltage). The GSP maxi power pack is used for larger stepper motors up to 17 A_{PEAK} (140 V motor voltage).

Motor currents can be set individually in 16 stages.

The GSP is controlled by a micro controller which receives the control commands from a superior controller, e. g. from a PC or a PLC. So it is possible to operate in two operation modes: online or PLC mode. The drive is connected to the superior controller via RS 232 or RS 485 (4-wire) serial interface.

Axis Controller

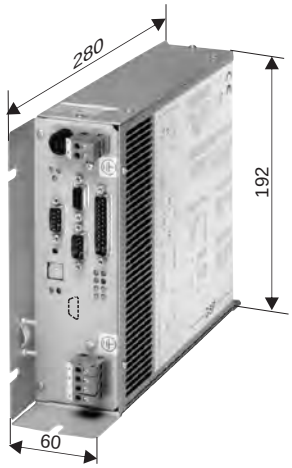
The GSP power packs operate with a dynamic ministep / full step changeover.

The step resolution is automatically adapted to the frequency:
1/8➔1/4➔1/2➔full step➔1/2➔1/4➔1/8.

Ministep guarantees high resonance suppression during a slow run. Full step enables the complete motor power at high frequencies.

The GSP use phytron's welltried technology, now with enhanced field syncronized current chopped regulation based on the patented SYNCHROCHOP principle developed by phytron.

Overview / Dimensions

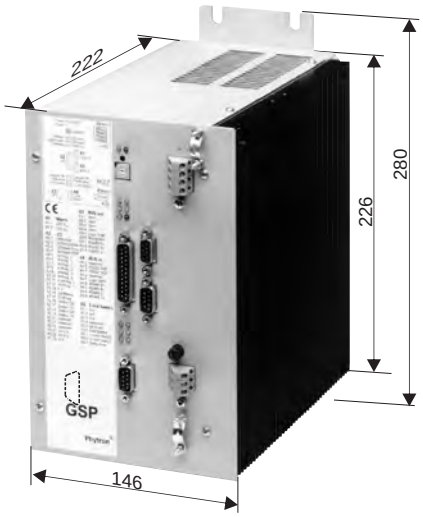


GSP VARIO POWER PACK

GSP 92-70 GSP-CAN 92-70	9 A_{PEAK} (6.3 $A_{r.m.s.}$) 70 V
GSP 72-70 GSP-CAN 72-70	7 A_{PEAK} (4.9 $A_{r.m.s.}$) 70 V
GSP 52-70 GSP-CAN 52-70	5 A_{PEAK} (3.5 $A_{r.m.s.}$) 70 V

GSP MAXI POWER PACK

GSP 172-140 GSP-CAN 172-140	17 A_{PEAK} (12 $A_{r.m.s.}$) 140 V



Dimensions in mm

Fig. 1

Technical Information

- A compact stepper motor module for bipolar control of two-phase stepper motors
- Power supply unit for 230 V_{AC} (Optional 115 V_{AC}: Vario Power Pack)
- LED display of the working condition
- PLC mode or online mode
- Parametrization and configuration in the online mode with IPCOMM
- 12 Digital inputs, 6 digital outputs, opto-decoupled
- Input logic 24 V
- Phase currents adjustable in 16 stages
- Step resolution up to 1/8 step
- Easy to install design
- Mounting bracket for wall mounting
- Fully EMC compliant metal housing
- Line filter for power supply
- Optional: SFI module for indication of step failures

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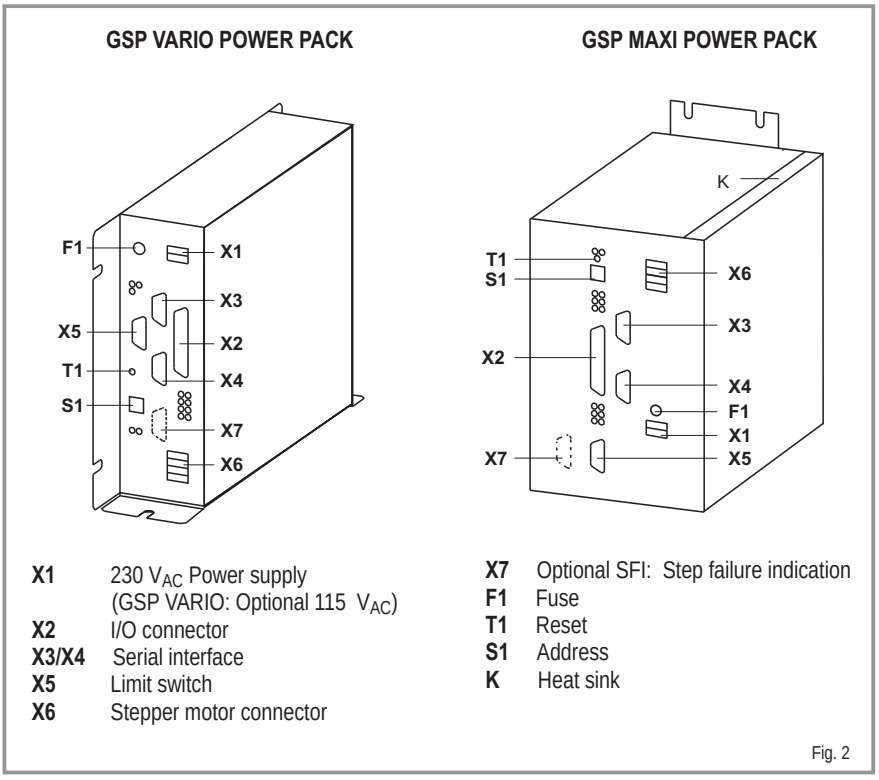
Operator's Controls



X1 230 V_{AC} Power supply (GSP VARIO: Optional 115 V_{AC})
X2 I/O connector
X3/X4 Serial interface
X5 Limit switch
X6 Stepper motor connector
X7 Optional SFI: Step failure indication
F1 Fuse
T1 Reset
S1 Address
K Heat sink

Fig. 2

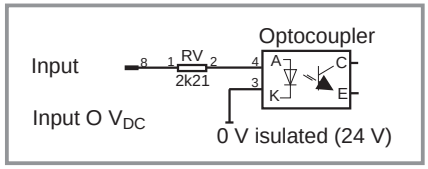
Digital Inputs and Outputs

The 12 digital inputs are optically isulated from the GSP supply voltage (X2 connector).

This assures best noise suppression between control and power circuit.

The nominal input level is 24 V.

Input Logic



The 6 digital outputs are optically isulated and the rated output current is 50 mA.

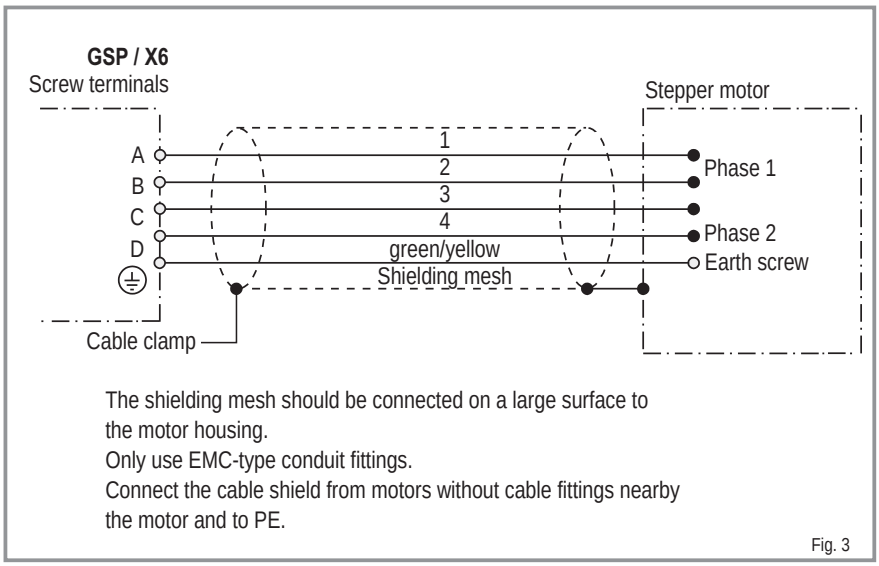
Input Limit Switches

Two limit switches type NCC can be connected to the X5 connector.

The 24 V_{DC} auxiliary voltage for the limit switches and the outputs has to be supplied to the X2 connector.

It is also possible to connect mechanical limit switches type NCC.

EMC Compliant Connection of the Stepper Motors



The shielding mesh should be connected on a large surface to the motor housing.
Only use EMC-type conduit fittings.
Connect the cable shield from motors without cable fittings nearby the motor and to PE.

Fig. 3

Stepper Motor

The phytron stepper motors ZSS, ZSH, RSS, RSH or other two-phase stepper motors can be connected in 4 or 8 lead wiring.
It is also possible to connect 6 lead stepper motors dependent on the design.

The winding inductivity of a motor phase should not be less than 0.5 mH.

The winding resistance should be less than 10 Ohm.

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GSP and GSP-CAN for Complex Handling Operation

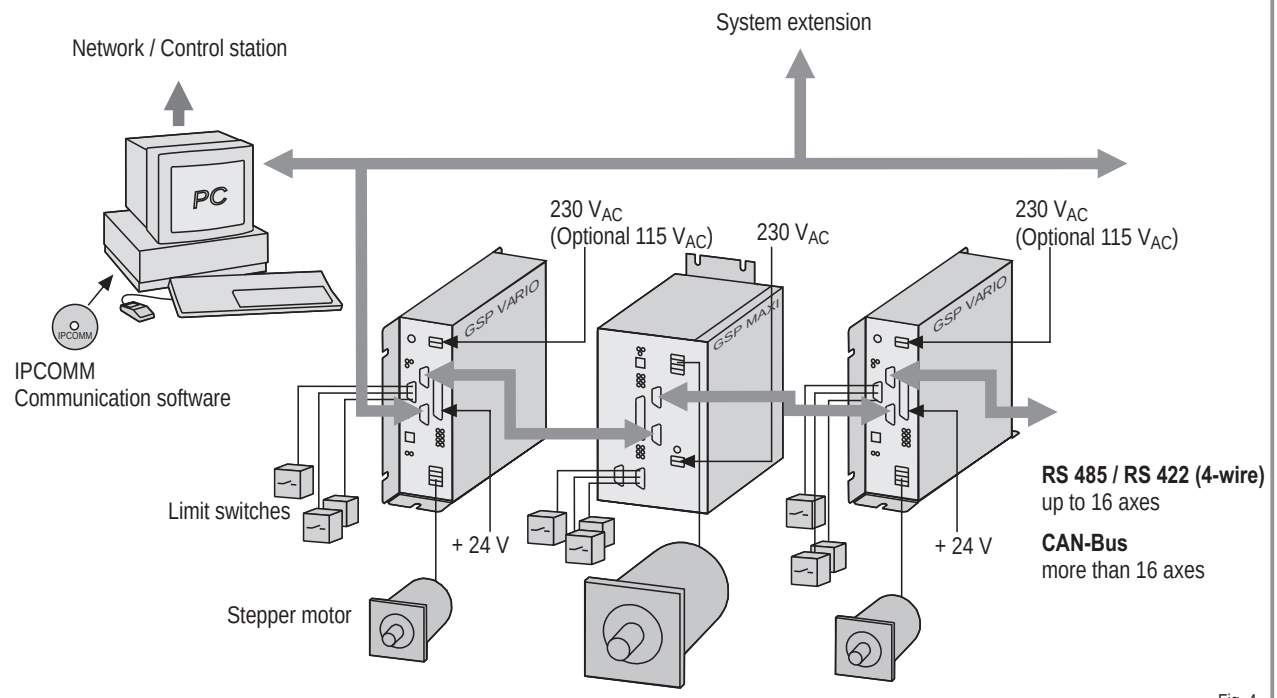

Fig. 4

GSP in the PLC Mode

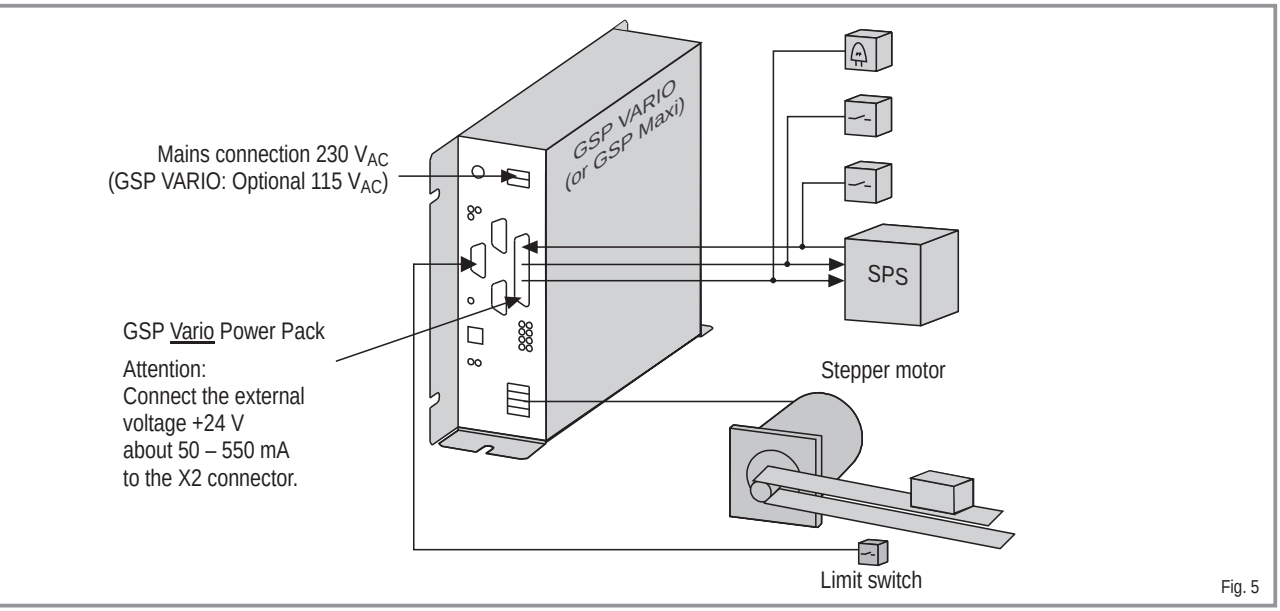

Fig. 5

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IPCOMM Communication Software

IPCOMM, a Windows® software for configurating and programming, is included by each GSP. IPCOMM is used to set up parameters and to programm the PLC sequences for the GSP.

The instructions can be integrated optionally into the own programs as ASCII strings - e. g. with LabView, Hyper Terminal or C. So it is possible to transmit the parameters to each GSP during initializing or changing a module and evaluate the status signal.

IPCOMM Characteristics

- Desktop with pull-down menus and mouse support, hotkey functions
- Configuration of the GSP
- Definition and transfer of PLC instructions
- Relative or absolute motion instructions
- Parameter settings like speed, ramp, motor current

Option: SFI Module

A stepper motor with encoder can be permanently monitored by the optional SFI module (**S**tep **F**ailure **I**ndication). So faulty motor positioning in case of overload can be rapidly detected.

The SFI circuit compares the set value (arriving pulse signals) with the true value (stepper motor position). The signal variation must not exceed seven full steps, otherwise an error signal is generated. The GSP will react on the error signal and stop the motor.

The incremental encoder supply voltage is generated by the SFI module:
approx. 5 V / maximum 100 mA.

Suitable incremental encoder resolutions:
50 / 200 / 500 / 1000.

A differential encoder with two output signals shifted by 90° can be wired to the X7 connector.

The SFI module's signal inputs are optically insulated. High noise immunity is obtained when driving the signal inputs with RS 422 control signals.

IPCOMM Menu Example

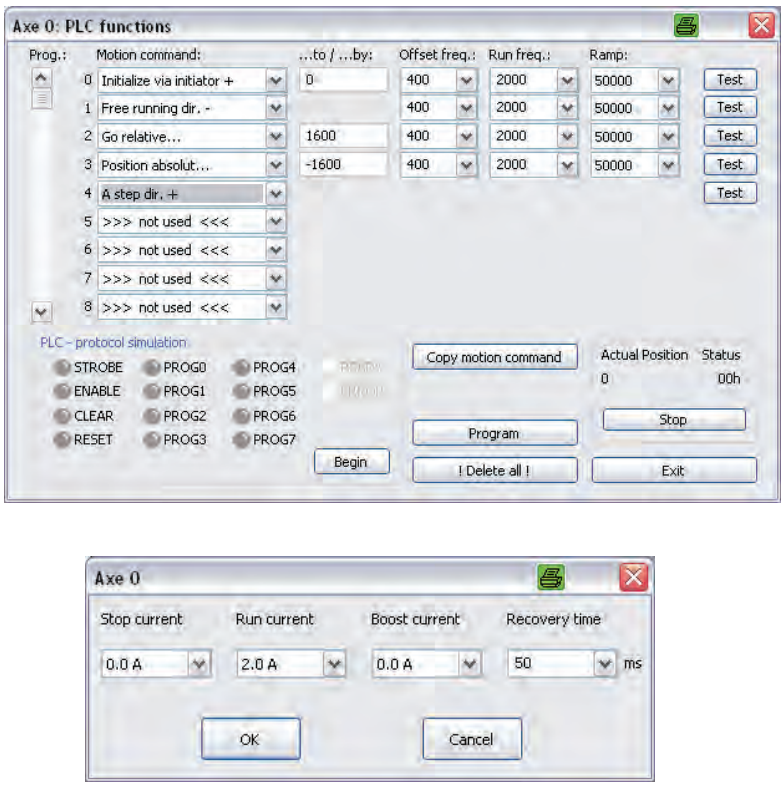

Fig. 6

Ordering Code

			GSP	92	-	70	-	SFI	-	CAN	-	230
Type	GSP	= Stepper motor drive										
Peak current	9	= 9 A										
	17	= 17 A										
Current regulation	2	= SYNCHROCHOP										
Motor voltage	70	= 70 V										
	140	= 140 V										
Optional	SFI	= **S**tep **F**ailure **I**ndication										
Interface	RS232	= RS 232 / RS 485										
	CAN	= CAN-Bus										
Power supply	230	= 230 V Standard										
	115	= 115 V Optional for Vario										

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