



## HSSI-IO16 Distributed I/O Expansion Module

**16 opto-isolated inputs and 16 opto-isolated outputs for SPiiPlus motion controllers**



**HSSI-IO16 module**

The High-Speed Synchronous Serial Interface (HSSI) provides a simple way to expand and distribute I/Os and other controller interfaces. The controller communicates with the expansion modules through standard Ethernet cables at a maximum length of 20 meters per HSSI channel.

The HSSI-IO16 is a modular I/O expansion unit that provides 16 opto-isolated inputs and 16 opto-isolated outputs which can be fully coordinated with motion. Up to 4 units of HSSI-IO16 can be daisy chained via each HSSI channel, providing total of 64 inputs and 63 outputs. The SPiiPlus PCI-8, as an example provides 4 HSSI channels. Therefore 256 inputs and 252 outputs can be added by using 16 HSSI-IO16 modules.

The input stage is versatile and can be configured as either sink or source. The outputs are sourced or sinked (order dependant), and are divided into two groups of 8 outputs each. The total current available to each group is up to 350mA. All outputs have overload protection. The I/O can be powered by a user supplied DC power source. If isolation is not required, the machine 24V power supply can be used instead. A green LED indicates the state of each input and output.

The HSSI-IO16 is constructed of durable anodized aluminum with two integrated mounting options:

- DIN Rail - for mounting on industrial DIN Rails.
- Surface Mount - for surface mounting using metal side brackets.

The HSSI-IO16 Module monitors the HSSI communication channel and its own integrity.

If the integrity check fails, the module automatically turns off all outputs. Every module is manufactured under an ISO9001 certified quality management system user.

- Cost effective way to implement a distributed I/O system
- 16 opto-isolated sink/source configurable inputs
- 16 opto-isolated source outputs with overload protection
- Up to an additional 256-inputs and 252-outputs by daisy chaining modules
- Module identification and diagnostics including LED's
- DIN rail or surface mount
- Simple programming using C and COM Libraries or ACSPL+

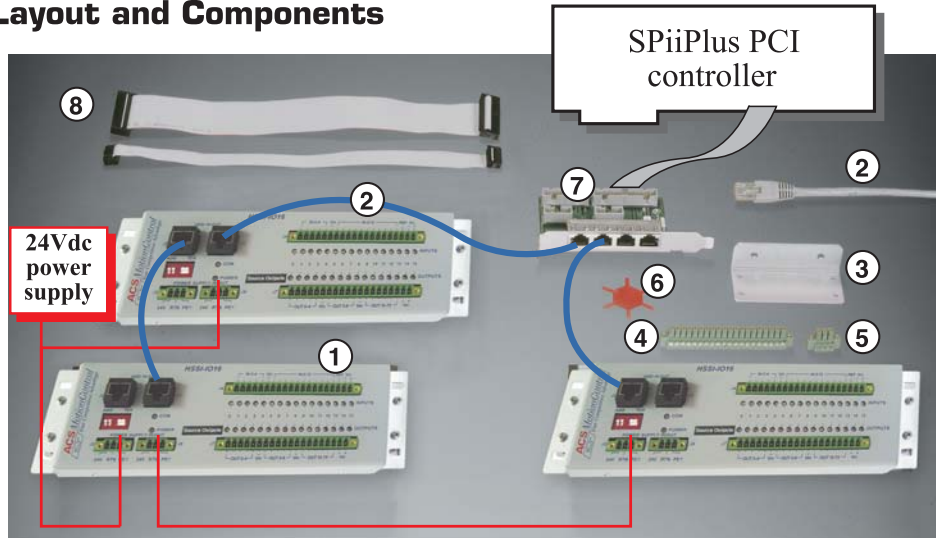


**The SPiiPlus products family includes motions controllers, software tools, and expansion modules.**

## Specifications

- Unit Supply:** 24Vdc ( ± 20%). Power ON LED indication.
- I/O Supply:** External 5Vdc ( ± 10%) or 24Vdc ( ± 20%) - automatically detected. The system 24V supply can be used instead, without isolation.
- Inputs:** 16. Each with a green LED status indication.  
Propagation delay: < 1msecond.
- Outputs:** 16. Divided into 2 groups of 8 outputs. Each with a green LED status indication.  
Current: Each output can source up to 350mA. Total current per group < 350mA. Total current per 16 outputs < 700mA.  
Propagation delay: < 1msecond.
- Communication:** 2.5MHz. Refresh period: each servo cycle (50µsecond).  
Green/Red LED for status indication.
- Dimensions:** H 74mm x W 190mm x D 34.5mm (H 2.91" x W 7.48" x D 1.36").

## HSSI-IO16 Layout and Components



## How To Order

**Example:** \_\_\_\_\_ HSSI-IO16

The following ordering options are available (numbers in parentheses refer to the picture above):

- **HSSI-IO16** - distributed I/O expansion module (1) with source digital outputs, and two mounting brackets (3).
- **HSSI-IO16-S** - distributed I/O expansion module (1) with sink digital outputs, and two mounting brackets (3).
- **HSSI-IO16 ACC** - HSSI-IO16 accessories. Includes:
  - Two 20 pins screws terminals I/O plugs (4) - Phoenix Contact part number MC 1.5\20 STF-3.81.
  - Two 3 pins screws terminals power plugs (5) - Phoenix Contact part number MC 1.5\3 STF-3.81.
  - Five coding profiles (6).
- **HSSI CABLE** - FTP type, category 5, 5m (16' 4.85"), standard Ethernet-type cable with RJ-45 plugs (2).
- **HSSI-HUB** - PC-expansion card providing standard RJ-45 jacks for four HSSI channels. This product is not required if the SPiiPlus Breakout Box (see SPiiPlus PCI data sheet) is used. The HSSI-HUB (7) comes with a 30-pin header, 25cm (9.84"), flat cable (8) for connection to the SPiiPlus controller.

For prototyping, the following products are recommended:

**HSSI-IO16 or HSSI-IO16-S, HSSI-IO16 ACC, HSSI CABLE, HSSI-HUB.**

## Warranty

The warranty of this product is according to the Terms and Conditions of Sale and is effective for one year after shipment from ACS Motion Control.

Copyright © December 2006 ACS Motion Control. All rights reserved. Version 1.7.

### ACS Motion Control Ltd.

Ramat Gabriel Industrial Park, POB 5668  
Migdal Ha'Emek 10500, ISRAEL  
Phone: +972-4-6546440 Fax: +972-4-6546443

### ACS Motion Control Inc

14700 28Th Ave. North, Suite 25  
Plymouth, MN 55447, USA  
Phone: +763-559-7669 Fax: +763-559-0110

For the most updated information, please refer to [www.ACSMotionControl.com](http://www.ACSMotionControl.com)