

## | 6 | CONTROLLERS AND HAND CONTROL UNITS

The introduction of our new CO 3000 controller combines more than 20 years of experience, with research and development, taking into consideration feedback from existing and potential customers. The intuitive design provides a 7" TFT display, allowing easy and precise operation in manual, semi-automatic and remote control mode.

The controller supports Innco and innco systems positioning devices, which are controlled via fiber optic cables. The GPIB (IEEE) and LAN (TCP/IP) ports add additional control methods and for future upgrades.

innco systems also offers a Hand Control Unit (HCU) for use with up to 3 devices. The connection of the HCU can be by either fiber optic or wire cable.

## | 6.1 | PRODUCT OVERVIEW

### CONTROLLERS (CO)

- Control up to one, four or eight devices
- Fiber optic cable connection
- GPIB & TCP/IP for remote control
- Drive support by all measurement software providers



### HAND CONTROL UNIT (HCU)

- Control up to three devices
- Fiber optic cable connection
- EMC shielded for chamber usage
- Works with CO 2000 & CO 3000



### USB CONTROL (PC-USB)

- Control of one single device
- Fiber optic cable connection
- Incl. dll file for VB or C++
- Incl. demo program
- No external power supply needed



### GPIB INTERFACE BOX

- Control of one polarisation axis
- Fiber optic cable connection
- GPIB for remote control
- Electric switch for manual operation





## | 6.2 | CONTROLLERS (CO)

The digital Device-Controller CO 3000 can be used for the operation of antenna masts, turntables, slide bars and other positioning equipment of Innco and innco systems. This controller permits the operation in manual, semi-automatic and remote control mode (via IEEE 488 (GPIB) bus or TCP/IP (LAN) interface). The quick move buttons and programmable jog wheel enable an intuitive and quick operation in manual mode. The 7" display provides an brilliant overview of the actual position of each device.

### CONTROLLERS (CO)

Type	Description	Article No.
CO3000-1D	Controller for 1 single device, 4 independent device ports	80005753
CO3000-4p	Controller for up to 4 devices, 4 independent device ports	80005688
CO3000-8p	Controller for up to 8 devices, 8 independent device ports	80005689

### ACCESSORIES

Type	Description	Article No.
HCU Basic Port	Connect direct on the backside of CO 3000 by wire	80005053
HCU Direct Port	Connect direct on the backside of CO 3000 by fiber optic	80005618
Update 3000	Update Controller CO 3000-1D to CO 3000-4p (license key will be provided)	80000354

### SCOPE OF DELIVERY

Type	Quantity
Power supply cable	1 x 1.8 m
USB update cable	1 x 1 m
Device ports:	
CO3000-1D & CO3000-4p	4 x
CO3000-8p	8 x
GPIB interface	1 x
LAN interface	1 x
USB port (for update)	1 x
Operating manual	1 x

TECHNICAL DATA			
TYPE	CO3000-1D	CO3000-4P	CO3000-8P
Data interface	IEEE 488, LAN (optional RS 232)		
Device interface	4 Port CAN-Bus via fiber optic (polymer type) (up to 8 ports & glass cable type available)	4 Port CAN-Bus via fiber optic (polymer type) (up to 8 ports & glass cable type available)	8 Port CAN-Bus via fiber optic (polymer type) (glass cable type available)
Controllable devices	1 device (upgrade to 4 devices by licence key)	4 devices	8 devices
Transfer rate	500 kBit/s		
Display	7" TFT 840 x 400 pixel		
Operating voltage	110 / 230 V (50 / 60 Hz)		
Power	max. 20 W		
Fuse	T 1.25 A, 250 V		
Size	3HE 19" rack mount (448 x 135 x 250 mm)		
Weight	approx. 3 kg		
Temperature range	+8 °C...+40 °C		







## | 6.3 | HAND CONTROL UNIT (HCU)

The Hand Control Unit is designed for usage either inside chamber or even in control room. For inside chamber usage, the copper coating and auto-off function of the electronic guarantee no EMC interference during measurement. The fiber optic connection by POF or optionally GOF single phase cable, reduce the setup time.

The ergonomic designed foil-keypad guarantees a comfortable handling during operation. Three illuminated unit buttons show the actual device in remote operation.

The three status LEDs of the unit buttons are for indication of low battery voltage, if illuminated at the same time. In standard configuration are 3 AAA batteries used. An optional charger and accumulators are available on request.

### HAND CONTROL UNIT (HCU)

Type	Description	Article No.
HCU-LWL3	Connection by fiber optic cable, up to three devices	80006616

### ACCESSORIES

Type	Description	Article No.
HCU-LWL3-GOF	Connection for glass optical fiber	80005617
HCU basic Mast	Wire connection to CO 3000 for mast operation only	80005004
HCU basic Table	Wire connection to CO 3000 for table operation only	80005833
Charger for HCU	In combination with rechargeable batteries	On request

### SCOPE OF DELIVERY

Type	Quantity
Battery AAA (micro)	3 x
Fiber optic cable (simplex)	1 x 10 m
Operating manual	1 x

## TECHNICAL DATA

TYPE	HCU-LWL3
Size	115 x 65 x 26 mm (L x W x H)
Housing material	ABS, inside copper coated
Connection to controller	by fiber optic line POF or GOF
Operating voltage	3.2...4.5 V by 3 x 1.5 V AAA
Operating time by battery	approx. 30 h (while continues usage)
Auto-off	after 20 sec
Keypad	foil keypad
Temperature range	+8 °C...+40 °C





## | 6.4 | USB CONTROL (PC-USB)

Including

- Demo software in visual basic and C++ for the controlling of all functions of mast, turntable, antenna stands and turndevices
- Converter from USB to fiber optic
- dll-files and sourcecode for possibility of further processing of the software

### USB CONTROL (PC-USB)

Type	Description	Article No.
USB Control (PC-USB)	USB – fiber optic converter	80000230

### ACCESSORIES

Description	Article No.
5 m fiber optic cable for USB converter with FSMA/RP-02 connectors	21001268

### SCOPE OF DELIVERY

Type	Quantity
USB – fiber optic converter	1 x
Fiber optic cable	1 x 5 m
innco dll file	1 x
Demo software	1 x
Programming description	1 x

## TECHNICAL DATA

TYPE	USB CONTROL (PC-USB)
Operating voltage	4.75 V...5.25 V (powered by USB port) power supply max. 5.5 V
Current consumption	< 100 mA
Electrical interface	USB device full speed
Electrical connector	USB A
Optical interface	RS 232
Max. opt. data rate	921600 Bits/s
UART interface support	7 or 8 data Bits 1 or 2 stop Bits
Optical connector	RP - 02
Wavelength	650 nm
Opt. Pout	>100 µW in 980 / 1000 µm
Opt. Pin	1 µW
Dimensions	approx. 64 x 18 x 9 mm
Weight	approx. 10 g
LED indicators	green = Vcc red = R x D (rec. data)
Temperature range	+8 °C...+40 °C







## | 6.5 | GPIB INTERFACE BOX

The GPIB Interface Box is designed for the simple operation of antenna stands or polarisation units. The installed switches enable the control in manual or remote control mode (via IEEE 488 / GPIB bus). The GPIB address can be modified by internal DIP-switches. The device works as listener only; optional available fiber optic switches can be installed on the device to indicate the actual-position.

### GPIB INTERFACE BOX

Type	Description	Article No.
GPIB Interface Box	Interface box for polarisation control by fiber optic cable	80600014

### ACCESSORIES

Type	Description	Article No.
-2 AS	GPIB interface for two antenna stands	On request
-3 AS	GPIB interface for three antenna stands	On request
-4 AS	GPIB interface for four antenna stands	On request

### SCOPE OF DELIVERY

Type	Quantity
Power supply cable	1 x 1.8 m
Device port	1 x
GPIB interface	1 x
Operating manual	1 x

TECHNICAL DATA	
TYPE	GPIB INTERFACE BOX
Data interface	IEEE 488 / GPIB (listener only) (primary and secondary address necessary)
Device interface	1 port via fiber optic (polymer type) (up to 4 ports available)
Transfer mode	Light signal
Switches for	Remote or manual operation H / V polarisation (in manual mode)
Operating voltage	110 / 230 V (50/60Hz)
Current consumption	approx. 20 W
Fuse	T 125 mA, 250 V
Size	181 x 300 x 68 mm (L x W x H)
Weight	approx. 2 kg
Temperature range	+8 °C...+40 °C

