

# GANTRY COMMANDER *Plus*



**WITH ACOUSTIC INTELLIGENCE FOR  
CONTINUOUS MONITORING OF GANTRY  
MOTION IN PORT CRANE OPERATIONS**

# iSOLV

INNOVATIVE SOLUTIONS

analytical

bulk flow

**DISTANCE**

flow

level

pressure

temperature

industrial  
communication

# FLOTECH

PROCESS CONTROL & INSTRUMENTATION



## Gantry Commander Plus WITH ACOUSTIC INTELLIGENCE FOR CONTINUOUS MONITORING OF GANTRY MOTION IN PORT CRANE OPERATIONS

For many busy ports around the world, the challenge is to ensure that cargo move smoothly and safely regardless of weather conditions. Port efficiency demands exceptional performance from a reliable gantry motion monitoring system. iSOLV Gantry Commander Plus meets or exceeds the requirements.

iSOLV Gantry Commander Plus continuously calculates the steadily declining distance between two opposing cranes down an aisle of containers. It signals to the crane's controller circuitry, and alerts the moving crane to halve its speed and to eventually come to a complete stop.

### Measuring Principle

The iSOLV Gantry Commander Plus system emits a pulse, which is reflected from the target crane being monitored. The echo is processed using the speed of sound through air, hence determining the distance from the transducer to the target crane. The measured distance is compared to the programmed set points to determine the relays to be switched. Gantry Commander Plus also provide individual analog output for continuous monitoring of crane movement.

The iSOLV Gantry Commander Plus employs specially designed gain curve control and variable pulse rate which shortens response time as the cranes move closer to each other, thus enhancing the reliability and speed of the system.

It uses two separate frequencies to cover both the forward and rearward motion. This eliminates cross talk problems and the need for special signal filtering techniques associated with other systems.

### Features / Benefits

- a) Gantry Control
  - i) Selectable "JUMPER" can be set either to activate transducer facing crane gantry movement, or to continuously activate both transducers regardless of the crane movement.
  - ii) Selectable "JUMPER" can be set either with external or internal power.
- b) Relay Output Configuration  
Selectable "JUMPER" can be set to offer a variety of control options. It can be configured to operate in series with 4 relays or in parallel with 8 relays.
- c) Analog Output (4-20mA)  
mA output available for continuous monitoring of crane movement.
- d) Chassis Earthing  
Selectable "JUMPER" can be set either to be grounded or isolated.
- e) Program Setting  
It comes pre-programmed, using data from field tested and operational cranes at existing port facilities.
- f) Power Supply  
Universal power supply 85 – 264VAC 50/60Hz



The dual frequency approach offers greater reliability and much shorter response time, which provide a higher level of confidence in the crane distance detection system.

The microprocessor-based system is completely field programmable via built-in keypads.

The measured distance within the operating range is used to program set points for alarm/control of relay switching contacts.

The analog output in term of current (4-20mA) is used for continuous monitoring of crane movement.



iSOLV Gantry Commander Plus utilises two specially designed transducers capable of measuring distances from 1.8m to 80m.

## Specifications



Transducer

### Transducer

Number of Transducers	2 (GC1 = 10kHz & GC2 = 5kHz)
Range	1.8m – 80m
Beam Angle	6 degree with focaliser
Blanking Distance:	1.5m
Operating Temperature	-20°C to +80°C
Material:	Body & Cone – Polypropylene
Mounting Bracket	Electro-galvanised plate with epoxy powder coating
Cable Extension	TYCAB DMC 71402 or BELDEN 83659 up to 100m



Transceiver

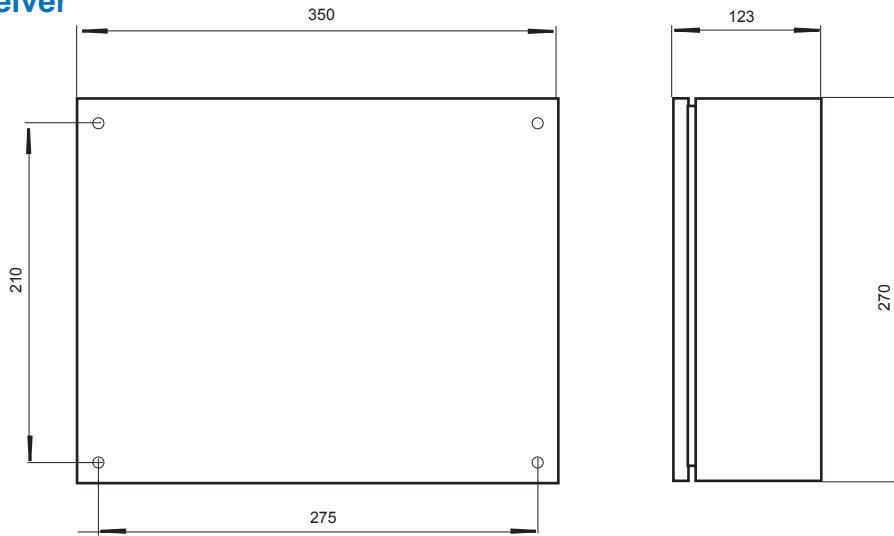
### Transceiver

Mode of Operation	Crane to crane distance measurement
Electronic Frequency	Dual (5 kHz & 10 kHz)
Display	2 x 8 digits alphanumerical LCD for measurement and parameter reading
Electronic Accuracy	±0.25% of maximum measured distance
Programming	Via built-in keypad
Parameter Retention	Memory stored in EEPROM (Non Volatile)
Relay Output	2 x 4 switch contacts (SPDT), rated 1A @ 250 VAC non inductive
Analog Output	2 x 4 - 20mA
Operating Voltage	85 to 264 VAC, 50/60 Hz
Operating Temperature	-20°C to +60°C
Wall Mounted Enclosure	270mm (H) x 350mm (W) x 123mm (D) - Mild steel phosphated and coated with textured epoxy/polyester finish

### Shipment Weight

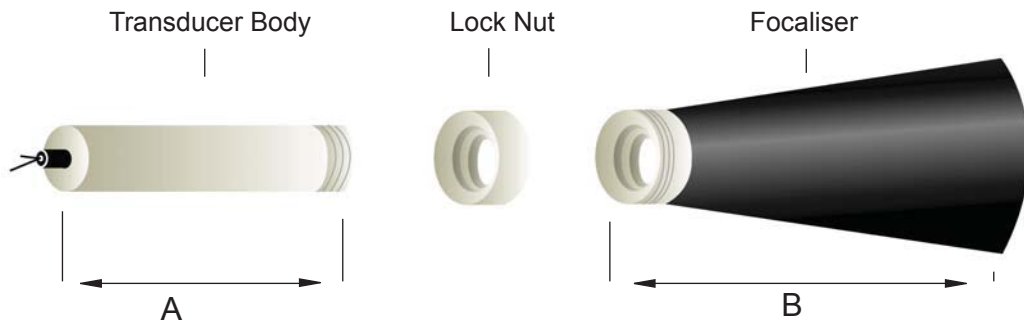
Transceiver	5 kg
Transducer	10 kg – (GC1) & 12 kg – (GC2)

## Dimensions (In mm) Transceiver



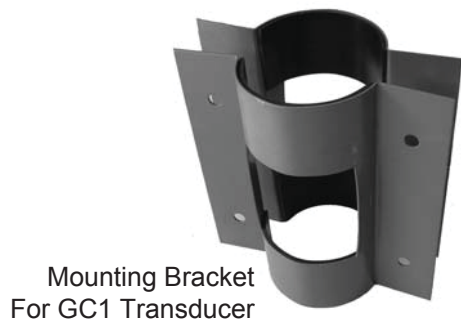
## Transducer

Exploded View Assembly



Nominal Transducer Dimensions		
	A	B
GC1	360 mm	403 mm
GC2	672 mm	403 mm

\* Thread the transducer body fully onto the cone until the parts are tightly fastened.



## Typical Installation

Simple and reliable....

improves port efficiency and safety....



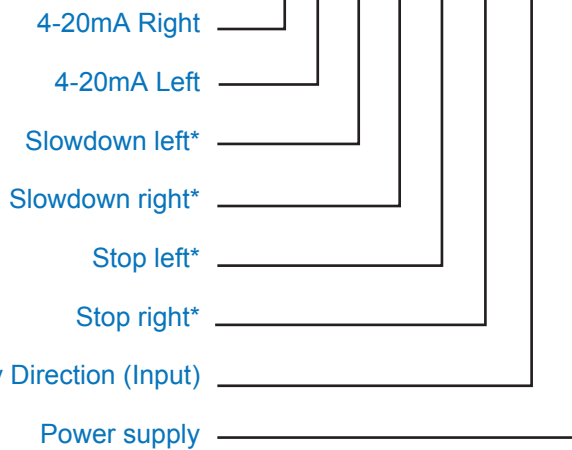
Transducer in operation



GC1 (10 kHz)



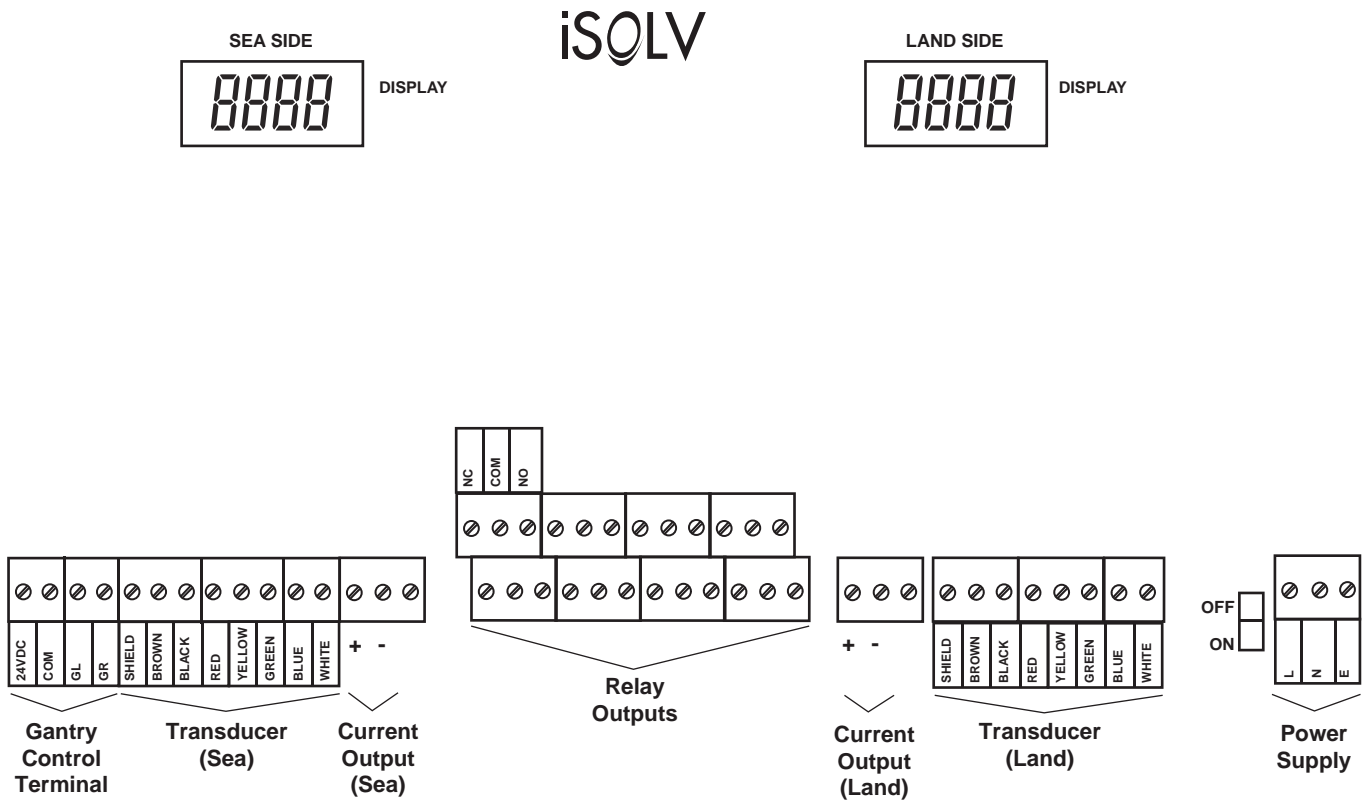
GC2 (5 kHz)



Easy to access and install

\*Switch contact (Normally close)

## Wiring Terminal Assignment



### Special Notes:

The cable at the back of the transducer must not be used for lifting purposes. Any stress on the cable will damage the internal connection and affect the performance of the transducer.

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PROCESS CONTROL & INSTRUMENTATION

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