

INSTALLATION MANUAL

OCTOPUS Type 2 RFB Module
Mechanical Drives

OC15278



Revision History

Revision	Description
A	Released in Book Format
B	See DCR # 0357
C	See DCR # 0884
D	See DCR # 1045

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A1. RUDDER FEED BACK SIGNAL - OVERVIEW:

All of the major Autopilot manufacturers offer systems that are capable of operating without a Rudder Feed Back (RFB) signal input to the course computer. Some performance limitations are usually found with these systems. There is no question in the industry that the addition of a RFB enhances the performance of the Autopilot system and enables the addition of a Rudder Angle Indicator instrument to the display.

A2. OCTOPUS – RFB MODULES:

Type 2 RFB Modules can very easily be fitted to all Octopus Mechanical Drive Systems. The installation and calibration takes literally minutes to complete and the module housing is extremely robust. There are no delicate brackets and mechanisms to install and maintain.

A3. OCTOPUS – RFB OPTIONS:

Octopus offers 2 types of RFB Modules.

1. Universal RFB – OC15SUK27

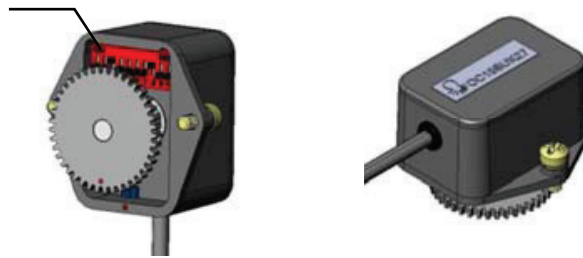
The Universal RFB can be adjusted to operate with Autopilots from all of the major manufacturers. The module is equipped with a DIP switch; adjusting the switch settings is all that is required. See Table 1 for Dip Switch Settings.

2. Pilot Specific RFB – OC15SUK27A – 27B – 27D – 27E

The Pilot Specific RFB's are factory tuned to operate with Autopilots from specific manufactures. They are the most economic choice. See Table 2 for selection guide.

B. DIPSWITCH SETTING:

Dip Switch



Universal RFB Module

Table 1											
Auto Pilot Manufacturer	Dipswitch Setting										**Resistance
Furuno Navman TMQ Garmin Coursemaster	*									*	1 Kohm
		*	*	*	*	*	*	*	*	*	
	1	2	3	4	5	6	7	8	9	10	
Raymarine		*							*		5 Kohm
	*		*	*	*	*	*	*		*	
	1	2	3	4	5	6	7	8	9	10	
*Simrad			*					*			3 Kohm
	*	*		*	*	*	*		*	*	
	1	2	3	4	5	6	7	8	9	10	
Comnav Si-Tex				*			*				4 Kohm
	*	*	*		*	*		*	*	*	
	1	2	3	4	5	6	7	8	9	10	
* Simrad Auto Pilots require the addition of PCB part # OC15222.											
** Fixed Resistance measured between black & red wire. Resistance between white and black wire is variable.											



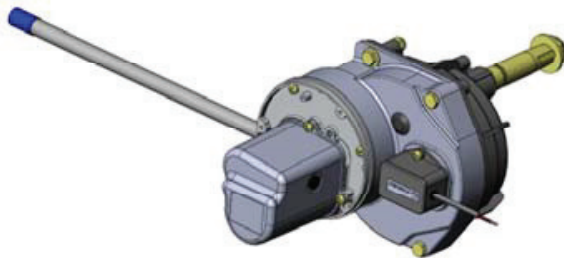
Typical Dip Switch

C. SPECIFIC MODULE SELECTION:

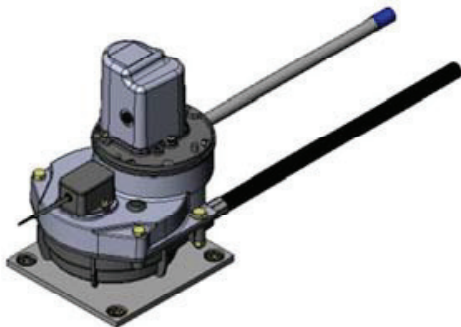


Pilot Specific RFB

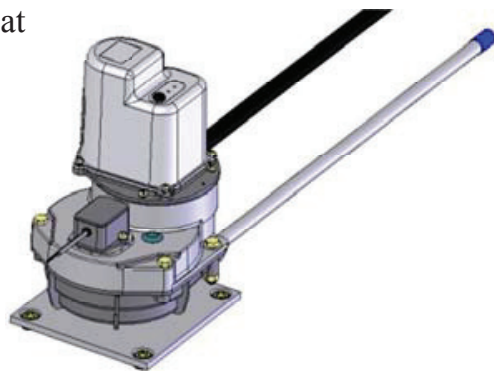
Table 2		
Part Number	Auto Pilot Manufacturer	Resistor
OC15SUK27A	Comnav – Si-Tex	4 K ohm
OC15SUK27B	Raymarine	5 K ohm
OC15SUK27D	Simrad	3 K ohm
OC15SUK27E	Furuno-Navman-TMQ Garmin-Coursemaster-SiTex SP110	1 K ohm



Type S Drive
Power Boat



Type R Drive
Power Boat

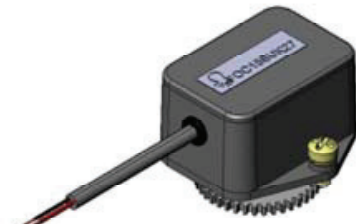


Type RS Drive
Sail Boat

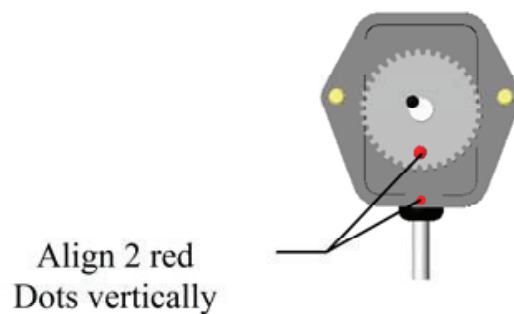
Typical Complete Installations

D. CALIBRATION:

1. Disassemble the RFB module from the drive housing, by removing 2 attach screws.
2. Complete the installation of the drive unit into the vessel and install the remote steering cable following the drive installation guide.
3. Complete the electrical hook up of the drive following the drive-autopilot installation guide.
4. Complete the electrical hook up of the RFB module following the drive-autopilot installation guide.
5. Center the gear on the RFB module by aligning the red paint mark on the gear with the red paint mark on the housing as shown in underside view graphic below.
6. By turning the steering wheel of the helm unit, centre the rudder.
7. Reassemble the RFB module to the drive housing and install and tighten the 2 attach screws. Ensure that the mesh between the RFB module and the drive gear is not excessive.
8. See Auto Pilot installation guide for instructions on additional software controlled RFB fine calibration and HO limitation.



RFB Module



Underside View

E. SIGNAL CABLE HOOK UP (not for Simrad Pilots):

1. Connect Octopus RFB Module wires to Auto Pilot Junction Box following Auto Pilot installation and wiring diagram. See Tables 3 and 3A for wire colour code conversions for common Auto Pilot Brands.
2. Perform electrical and calibration testing following Auto Pilot installation guide.

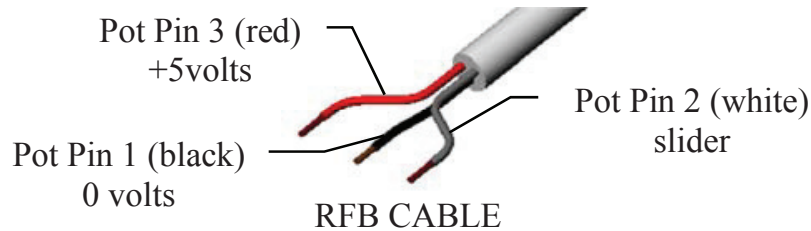


TABLE 3				
OCTOPUS	RAYMARINE	NAVMAN	TMQ	COURSEMASTER
Red	Red	Orange	Red	Orange
Black	Green	Black	Blue	Blue
White	Blue	Blue	Green	Brown
Shield	Silver	Black	Black	not used

TABLE 3A				
OCTOPUS	COMNAV	GARMIN	SITEX	
			SP110	SP70 & 80
Red	Power	Red	+ve	pin 3
Black	Common	Black	-ve	pin 1
White	Position	Yellow	wip	pin 2
Shield	not used	not used	not used	not used

F. SIGNAL CABLE HOOK UP (Simrad Pilots Only):

1. It is **IMPORTANT** that all wire connections are made between the RFB Module – Signal Conversion Module – Course Computer before switching power on to the Course Computer. Failing to follow this will result in the RFB signal not being recognized by the Course Computer. If this occurs - perform the “**Auto Pilot Reset**” procedure to continue.
2. When integrating with Simrad Auto Pilots - the RFB Module OC15SUK27D **MUST** be used in conjunction with the Signal Conversion Module OC15SUK83.
3. Determine suitable site to mount the Signal Conversion Module. Shorten or insert suitable extension cable as required to suit the installation.
4. Splice the RFB Module output & Signal Conversion Module input cable wires together. Like colour to like colour – insulate and protect.
5. Connect Octopus Signal Conversion Module output wires to Auto Pilot Junction Box following Auto Pilot installation and wiring diagram.
6. Perform electrical and calibration testing following Auto Pilot installation guide.

TABLE 4			
OCTOPUS		SIMRAD	
OC15SUK27D	OC15SUK83		AC12 – AC42
OUTPUT	INPUT	OUTPUT	INPUT
Red	Red	Shield	Shield
White	White	Brown	Brown
Black	Black	White	White
Shield	Shield	n/a	n/a

F. MAINTENANCE:

No maintenance is required for this product.