

RC2500 Resolver Interface Using Synchro Cabling

A version of the RC2500 antenna controller is available to retrofit antennas originally equipped with a Harris 9135 antenna controller. The retrofit is plug compatible with the Harris 9135 outdoor unit.

The 9135 was designed to interface with synchro type position sensors. Synchro's are obsolete. The RC2500 interfaces to resolver type position sensors. To use the RC2500 with the Harris antenna the synchro's and their mounting brackets must be replaced with resolver's and resolver mounting brackets. Resolvers and resolver mounting brackets are available from Research Concepts. Most synchro installations are equipped with five conductor shielded cable. A resolver typically uses three twisted, shielded pairs (6 conductors total). For a retrofit RCI recommends new cabling. It is possible, however, to use the existing synchro cabling with resolvers.

The following table describes how to interface resolvers to an RC2500 using five conductor shielded cabling.

Resolver Connections		RC2500 Resolver Connections (J2 Azimuth, J3 Elevation, J4 Polarization)
Signal Name	Color	
Ref +	Red/White	2
Ref -	Yellow/White	8
Sin +	Yellow	5
Cos -	Black	9
Sin -	Blue	3
Cos +	Red	3
Drain (shield)	No Connection	1

Notes:

At the resolver connect the Sin – (blue) and Cos + (red) resolver leads together with one of the conductors in the 5 conductor cable. That conductor should be connected to terminal 3 of the RC2500's resolver connector.

The shield must be insulated at the resolver. A piece of heat shrink tubing can be placed over the cut in the outer jacket of the cable.

On 9135 installations, the synchro was excited by a 90 VAC transformer located in the outdoor unit. Disconnect this transformer. The resolvers interface directly to the RC2500, there are no resolver connections in the outdoor unit.

Here are the RCI part numbers for the resolver, resolver brackets, and cabling.

RCI Part Number	Description
Z-RSLVR11_2-1A	Size 11 Resolver, Clifton Precision # 11-BHW-48F/F662
M-RSLVRBRKT-1	Az/EI Resolver Bracket for Harris Antenna
M-RSLVRBRKT-2	Pol Resolver Bracket for Harris Antenna
CBL-3X2_22-STP	Resolver Interconnect Cable, three twisted pair, individually shielded, with bare drain wire. Belden p/n 87777.