



**DATA SHEET**  
**RTFE-D15D**  
**DIGITAL FRONT END FOR RHOTHOR SMART DEFLECTORS™**

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**NEWSON NV**

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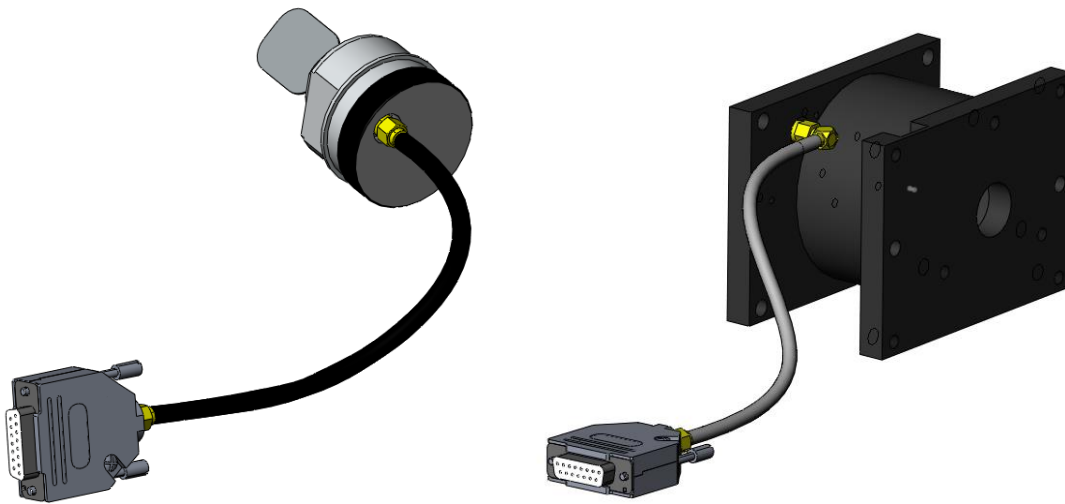
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## 1 FEATURES

- XY2-100 to SDP transfer protocol converter
- Support for XY2-100 standard with 16-bit set points
- Support for XY2-100 with 18-bit set points
- Motor position feedback
- Standard 15 pin DSUB female connector



## 2 TYPICAL APPLICATION CONNECTIONS



## 3 PIN ASSIGNMENT (15 PIN SUB-D SOCKET)

Pin No.	Name	Description
15	DC+12V	Power supply input 12V
7	DC0V	Power supply input 0V
1 / 9	SENDCK- / SENDCK+	Continuously running clock
2 / 10	SYNC- / SYNC+	Synchronizes data transfer
3 / 11	SETPOINT- / SETPOINT+	Set point data
4 / 12	POSITION- / POSITION+	Feedback position
5	TRACK_OVERLOAD	Digital output status line
13	TRACK_OK	Digital output status line
6,8,14	NC	Reserved, DO NOT CONNECT!

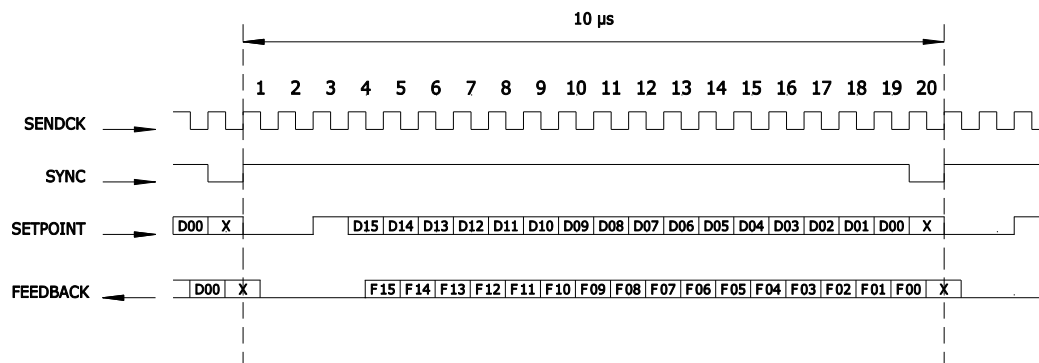
## 4 SPECIFICATION

Description	Name	Min	Typical	Max	Units
Power supply	DC+12V	9	12	13	V
Adapter current	I <sub>DC+12V</sub>		0.02		A
Adapter load	I <sub>Ld</sub>			2	A (1)
Adapter delay	t <sub>d</sub>		4		µsec
SENDCK frequency	f <sub>CK</sub>		2	2	MHz
Common mode digital input range		0		5	V (3)
Digital differential input high (V+ - V-)		0.2		5	V (3)
Digital differential input low (V+ - V-)		-0.2		-5	V (3)
Digital output high (source 10 mA)	V <sub>OH</sub>	4		5.5V	V (2)
Digital output low (sink 10 mA)	V <sub>OL</sub>	0		1	V (2)
Tightening torque SMA connection			1.0		Nm

- (1) Load depends on connected deflector type and movements.
- (2) POSITION+, POSITION-, TRACK\_OK, TRACK\_OVERLOAD
- (3) SENDCK+, SENDCK-, SYNC+, SYNC-, SETPOINT+, SETPOINT-

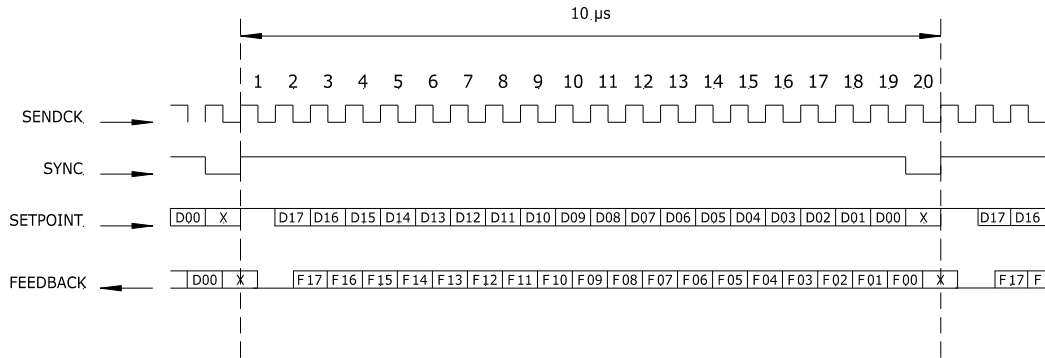
### 4.1 XY2-100 STANDARD PROTOCOL INFORMATION

#### 4.1.1 16-bit set point mode



[D15-D00]: Set point, offset binary  
 [F15-F00]: Actual position, offset binary  
 [X]: DC

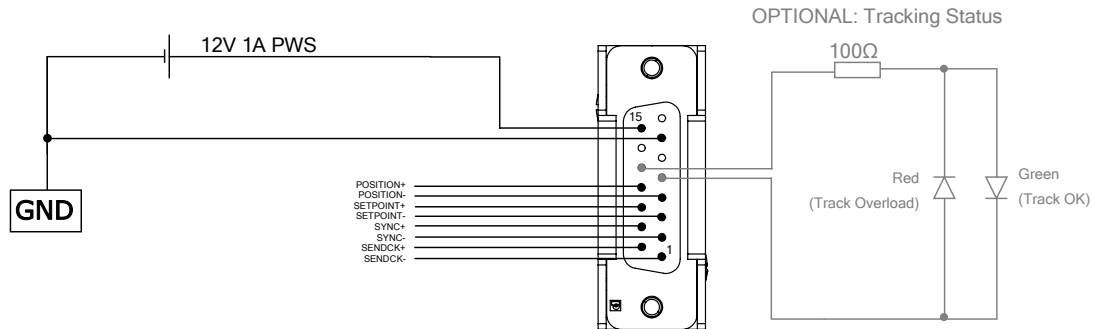
### 4.1.2 18-bit set point mode



[D17-D00]: Set point, offset binary  
 [F17-F00]: Actual position, offset binary  
 [X]: DC

## 4.1 TYPICAL CONNECTIONS

The connected deflector is powered over the device by the 12 V power supply connection. The same power supply is used to power the electronics inside the SUB-D shell.



## 4.2 TRACKING STATUS BITS

The outputs TRACK\_OVERLOAD and TRACK\_OK can be used to verify deflector tracking status. Current through the deflector highly depends on the applied set point variations. When applied setpoints have high frequency components the current will rise. The deflector supervises power consumption and uses error bits to indicate over steering (Ref A3G\_RTA). The output TRACK\_OVERLOAD equals the value of deflector's status bit (ERR\_OVLD). The output TRACK\_OK is a logical function of status bits ERR\_OVLD and ERR\_TRACK (TRACK\_OK = !ERR\_OVLD && !ERR\_TRACK). When the deflector is tracking and has no overload this output is set high. When the deflector is overloading, the value is set low. A serial circuit comprising a 2 pin dual color LED (red/green) and a 100 ohm resistor can be connected between TRACK\_OK and TRACK\_OVERLOAD status bits. When polarized accordingly, green light signals that the deflector runs without overload. Red light signals overload. When the deflector stops tracking both status bits are set low and the led goes out.

### 4.3 POWER UP SEQUENCE

There is no power up sequence restriction. The 12 V power supply can be switched on or off at all times. The electronics inside the module is powered by the same power supply as the connected deflector and executes a proper power up sequence. After power up, the status output and position bits on the 15 pin connector become activated. When those pins are connected to the control card, its inputs should be 5V tolerant. Even when the control card isn't powered yet!

## 5 DIMENSIONS

