

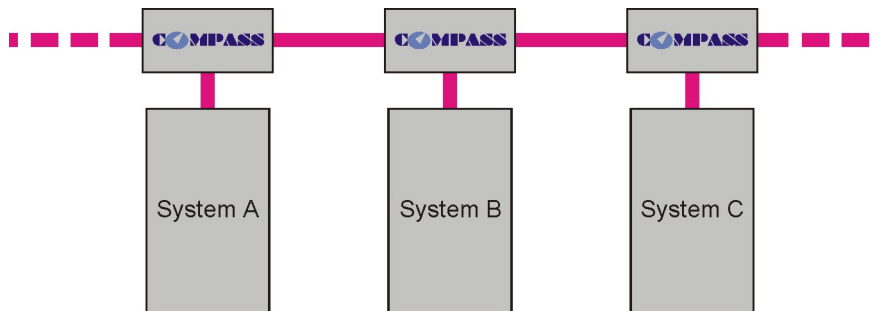
Compass Transfers

Introduction

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The Compass System

Compass is a distributed protocol conversion system, and allows control systems from several different manufacturers to be linked together to form one complete building control system. The Compass Network is made up of nodes, called Compass Points, and each Compass Point connects a particular device or system to the network.



Transfers

Compass Points can pass values from a system to others via the Compass Network. This is performed using Transfers within each Compass Point.

Transfers normally work as pairs. One transfer reads a value from a device and transmits it around the Compass Network. The second transfer receives it from the Compass Network and writes the value to a device.

The 'transmitting' transfer has two parts; device function and network function.

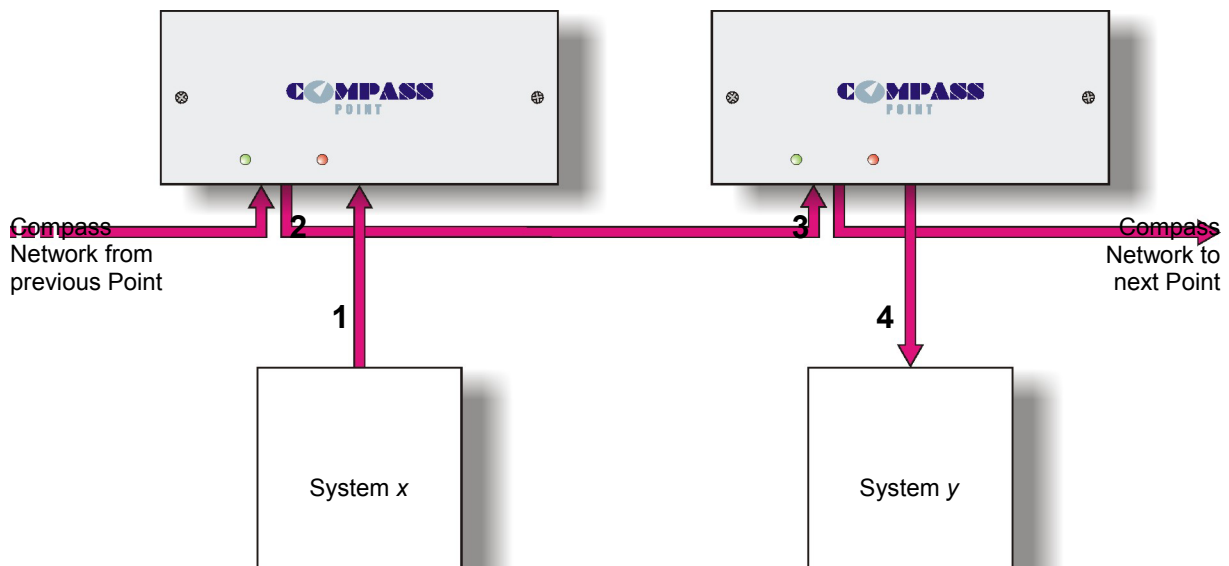
(1) The device function reads a value from 'System x' into the Compass Point and checks to see if the value has changed.

(2) The network function transmits the value on to the Compass Network.

The 'receiving' transfer has two parts: device function and network function.

(3) The network function receives a value from the network and checks to see if the value has changed since it last received.

(4) The device function writes the value from the Compass Point to 'System y'.



Examples

Read and Transmit

The read and transmit parts of a transfer, (which is the process of getting a value from a system on to the Compass Network) has certain attributes that determine how it interacts with a device. The main property of a transfer is the Device Object, which is the reference of the object that the value will be read from. The table below is a typical of a Compass Point putting values onto the Network for other Compass Points to receive.

The value of a sensor attached to a Trend system is to be passed on to the Compass Network. The sensor is the third sensor on Outstation 21. The Trend system is connected to a Compass Point with the Device Number of 8. Using the Compass documentation for the Trend system [[Compass v22 \ TrendIQ](#)] it can be seen that the Device Object is **D8.O21.S3.V**.

Transfer Number	Group Number	Network Function	Value	Device Function	Device Object	Device Rate	Status
25	17	Tx	19.5	Rd	D8.O21.S2.V	ASAP	0
26	18	Tx	19.5	Rd	D8.O21.S3.V	ASAP	0
27	19	Tx	20.5	Rd	D8.O21.S4.V	ASAP	0

Stage 1: The Compass Point reads (Rd) the value (19.5) from D8.O21.S3.V.

Stage 2: The Network Function is set to Transmit (Tx), therefore the value (19.5) is transmitted on to the Compass Network. A Group Number (18) is transmitted as part of the transfer. The Group Number is a 'marker' for other Compass Points to watch for. The Group Number can be in the range of 1 to 60,0000

Device Rate controls how often the reading occurs. The options are 'ASAP', '1 minute', '1 hour', '1 day', '7 days' and '28 days'.

All of the options except 'ASAP' are fixed intervals of time.

Receive and Write

The receive and write parts of a transfer, (which is the process of getting a value from Compass Network and writing it to a system) has similar properties that determine how it interacts with a device. The main property of the transfer is still the Device Object, which is now the reference of the object that the value will be written to.

Transfer Number	Group Number	Network Function	Value	Device Function	Device Object	Device Rate	Status
16	17	Rx	0.5	Wr	D11.T1.CV	ASAP	0
17	18	Rx	19.5	Wr	D11.T3.CV	ASAP	0
18	19	Rx	34	Wr	D11.T3.CV	ASAP	0

Stage 3: Another Point on the Compass Network has the Network Function set to receive (Rx) the value (19.5) with the Group Number (18).

Stage 4: the value is now written (Wr) to the Device Object **D11.T3.CV**

Before a Transfer is Created

It is good practice to emulate the actions of a particular transfer before entering it into the Transfer Table. Doing so will confirm that communications are successful between the Compass Point and the device.

If the Transfer has to read a value, then use the Test page to read the value first. This will ensure that you have the correct Device Object. It will also tell you what the current value of the Device Object is.

If the Transfer has to write to a value, then use the Test page to write the value first. This will ensure that the Device Object can be written to, and again that the Device Object is correct.

Optimising Transfers

Although the Compass Network baud rate (156 kbaud) will be faster than those of the devices connected to the Compass Points, any time saving can be useful. Each Compass Point has room for up to 100 transfers. This area of storage is called 'the Transfer Table'. Logical placing of transfers in to the transfer table will help with '*optimising*', and with fault finding.

- 1 Always place read and transmit transfer in the Compass Point that is connected to the devices that the value is being read from.
- 2 The Device Rate of the read transfer should relate to how often the value changes. It is not necessary to read a value '*ASAP*' if the value only change once an hour.
- 3 Always place receive and write transfer in the Compass Point that is connected to the devices that the value is being written to.

It is not necessary to start with transfer 1 in the Transfer Table, then use 2 and so on. It may be easier to group transfer within the transfer table.