

### Customer Background

Brembo SpA is the world leader and acknowledged innovator of the disc brake technology for automotive vehicles. Brembo supplies high performance brake systems - for the most important manufacturers of cars, commercial vehicles and motorbikes worldwide - as well as clutches, seats, seat belts and other components for racing only.

Moreover, Brembo is also a leader in the racing sector and has won more than 200 championships.

Today the company operates in 14 countries of 3 continents, with 35 production and business sites, and a pool of about 5,400 employees (30/9/2009), about 10% of whom are engineers and product specialists active in the R&D. 2008 turnover is € 1,06 billion. Brembo is the owner of the Brembo, Breco, Marchesini, Sabelt brands and operates through AP Racing brand.

### The Challenge

ERP applications and in general manufacturing software helps manufacturers improve production performance across the enterprise; however a system that is designed for a specific industry maybe hard to find and usually it provides a rigid structure which means lacking of usability.

TTS network interposes itself in a transparent way between computers and manufacturing processes to be controlled; the system sends and receives alphanumeric strings, therefore TTS is independent from the programming language and OS as well.

It's an "out-of-the-box" solution so it can be implemented and upgraded immediately in every plant.

A typical TTS network is made by a master units and several slaves where end-systems (PLC, badges readers etc...) are connected; computers (AS/400, Unix/Linux, etc...), through the master, can communicate with every single slaves by sending and receiving alphanumeric strings (commands and data).

### The TTS Solution

In Brembo Polska assembling department (total workspace is 32.160 m<sup>2</sup>) are installed the following devices:

- ▶ Seven TTS30M masters
- ▶ Eighteen TTS40S/TG1 (RFID) slaves
- ▶ Five TTS01S slaves

The IT professional at Brembo haven't had to wait long to see improvements; according to Irczyk, << TTS is easy to use, affordable and fast to deploy.

We didn't need to buy additional software or hire more people and the support was just excellent! The main reason why we have chosen PHS products is because of the number of customer complaints we had due the bad product sign; thanks TTS system we have reduced the operator errors during the printing papers process by almost 24% and speed up the whole process.>>

### Conclusion

Irczyk said, "The TTS system is scalable and easy to use and can be perfectly integrated into any environment."

#### KEY BENEFITS:

- Reducing operator errors during printing papers C.D.I.
- Reducing the number of complaints from customers, due to choice of the bad products.

*"With the help of PHS products line we have reduced the customer complaints and operator errors during the printing papers process by almost 24%."*

Bartek Irczyk, IT Manager  
Brembo Poland sp. z o.o.



If you need more information about PHS products please visit [www.phsnet.eu](http://www.phsnet.eu) contact us to [info@phsnet.eu](mailto:info@phsnet.eu).

## IF340S/TTS40S

A **Slave** unit supports a full and half duplex communication; every logical unit can exchange data with computers through the TTS network.

User can connect portable terminals, industrial scales, printers, cash registers and many others devices. IF slaves are designed to support RFID technology.



### Specifications

APPLICATION & PROTOCOLS	FTP	TELNET	HTTP	Applications 99/100	
ELECTRICAL	External Voltage 24V (220V AC / 24V DC)			Ampere 700mA	
PHYSICAL	Protection Level IP51			Size 270x170x110mm	Weight 2000 gr
	Temperature 0° C - 50° C		Humidity Resistance 90%	89/836/CEE	
CABLES & COMMUNICATION	Ethernet RJ45/10BaseT			RS485	

## TTS30M Master



The **TTS30M** is equipped with two channels, one for the connection to the computer and the other for the TTS network.

The **TTS30M** master converts the alphanumeric strings and forward the packets to the TTS network by performing the required protocol conversions.

The connection to the computer is established via Ethernet or RS 232C .

### Specifications

APPLICATION & PROTOCOLS	FTP	TELNET	HTTP	Applications 99/100	
ELECTRICAL	External Voltage 24V (220V AC / 24V DC)			Ampere 600mA	
PHYSICAL	Protection Level IP51			Size 188x113x35mm	Weight 650 gr
	Temperature 0° C - 50° C		Humidity Resistance 90%	89/836/CEE	
CABLES & COMMUNICATION	Ethernet RJ45/10BaseT			RS485	

If you need further information about PHS products please visit [www.phsnet.eu](http://www.phsnet.eu) contact us to [info@phsnet.eu](mailto:info@phsnet.eu).