

## Introduction

Control Expert provides a set of optional implicit type conversion. By checking the option **Enable implicit type conversion** in [Project Settings](#) the types conversions are implicitly done and you do not need to use most of the explicit type to type functions you used before.

## Implicit Type Conversion Rules

After an implicit conversion, system bit `%S18` is set to one to indicate a possible side-effect:

- loss of accuracy
- range mismatches
- unexpected implementation-dependent behavior

The formal test of the value of system bit %S18 is the responsibility of the programmer, the application must manage the behavior of its operative part.

## NOTICE

### UNINTENDED EQUIPMENT OPERATION

Check the system bit %S18 (via the application) after an implicit conversion.

**Failure to follow these instructions can result in equipment damage.**

The implicit type conversion rules:

Precedence	Source Data Type	Target Data Type								
		REAL	DINT	INT	UDINT	UINT	DWORD	WORD	BYTE	BOOL
Highest →	REAL	x					E	E	E	E
→	DINT		x							E
→	INT	(IEC)	(IEC)	x						E
→	UDINT				x					E
Lowest	UINT	(IEC)	(IEC)		(IEC)	x				E
	DWORD						x			E
	WORD						(IEC)	x		E
	BYTE						(IEC)	(IEC)	x	E
	BOOL						(IEC)	(IEC)	(IEC)	x

**x** No data type conversion is necessary.

**|** Implicit data conversions available in Control Expert in addition to the IEC recommendations. If the result of the conversion does not fit the Data Type, the implicit conversion is done and system bit %S18 is set

**| (IEC)** Implicit data conversions in Control Expert that meet the IEC recommendations; explicit type conversions are allowed.

**E** Explicit data type conversions are required.