# Messages Version 1.0

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# $\begin{array}{c} {\rm Part\ I} \\ {\rm Introduction} \end{array}$



# Chapter 1

# Ecosystem Table

ecosystem description

Automation



# Part II Automation



# Chapter 2

# Dictionary

## 2.1 Parameter Table

Param	Description	Values
<shutterstep></shutterstep>	Step for moving up/Down advanced shutter	[1-99];100:
		• NULL or $100 \rightarrow \text{All}$ opened
		• 1-99 $\rightarrow$ up of the value
<shutterlevel></shutterlevel>	Level in advanced shutter	[0-100];255:
		• $0 \to All closed$
		• 1-99 $\rightarrow$ Current position (%)
		• $100 \rightarrow \text{All opened}$
		• $255 \rightarrow \text{Unknown position}$
<pre><shutterstatus></shutterstatus></pre>	State of advances shutter	[10-14]:
		• $10 \to \text{Stop}$
		• $11 \rightarrow \mathrm{Up}$
		• $12 \rightarrow \text{Down}$
		• $13 \rightarrow \text{Step-by-Step}$ Up
		• 14 $\rightarrow$ Step-by-Step Down



<shutterinfo></shutterinfo>	Device state/configuration for advanced shutter	0;[12-15]:
		• $0 \to \text{Normal}$
		• $12 \rightarrow PUL + Dis-$ abled
		• $13 \rightarrow \text{Disabled}$
		• $14 \rightarrow \text{Command not}$ executed
		• $15 \rightarrow \text{PUL}$
<shuttertype></shuttertype>	Type of command to manage the priority in ad-	[0-1]:
	vanced shutter	• $0 \to \text{Clear priority}$
		• $1 \to \text{Set priority}$



<shutterpriority></shutterpriority>	Priority level for advanced shutter	Priority:
		• $p_1 \to Safety priority$
		• $p_2 \rightarrow High priority$
		• $p_3 \to Medium priority$
		• 0, $p_1=0$ , $p_2=0$ , $p_3=0 \rightarrow No$ effect on priority
		• 0, $p_1=0$ , $p_2=0$ , $p_3=1 \rightarrow Clear$ Medium priority
		• 0, $p_1=0$ , $p_2=1$ , $p_3=0 \rightarrow \text{Clear High}$ priority
		• 0, $p_1=0$ , $p_2=1$ , $p_3=1 \rightarrow Clear$ High priority and medium priority
		• 0, $p_1=1$ , $p_2=0$ , $p_3=0 \rightarrow Clear$ Safety priority
		• 0, $p_1=1$ , $p_2=0$ , $p_3=1 \rightarrow Clear$ Safety priority and Medium priority
		• 0, $p_1=1$ , $p_2=1$ , $p_3=0 \rightarrow Clear$ Safety priority and High priority
		• 0, $p_1=1$ , $p_2=1$ , $p_3=1 \rightarrow Clear$ Safety priority, High priority and Medium priority



- 1,  $p_1=0$ ,  $p_2=0$ ,  $p_3=0 \rightarrow No$  effect on priority
- $\begin{array}{cccc} \bullet & 1, & p_1{=}0, & p_2{=}0, \\ & p_3{=}1 & \rightarrow & Set \\ & Medium \ priority \end{array}$
- 1,  $p_1=0$ ,  $p_2=1$ ,  $p_3=0 \rightarrow \text{Set High}$  priority
- 1,  $p_1=0$ ,  $p_2=1$ ,  $p_3=1 \rightarrow Set$  High priority and medium priority
- 1,  $p_1=1$ ,  $p_2=0$ ,  $p_3=0 \rightarrow \text{Set Safety}$ priority
- $\begin{array}{cccc} \bullet & 1, & p_1{=}1, & p_2{=}0, \\ p_3{=}1 & \rightarrow & Set \\ Safety & priority & and \\ Medium & priority \end{array}$
- 1,  $p_1=1$ ,  $p_2=1$ ,  $p_3=0 \rightarrow Set$  Safety priority and High priority
- 1,  $p_1=1$ ,  $p_2=1$ ,  $p_3=1 \rightarrow Set Safety$  priority, High priority and Medium priority



## 2.2 Where Table

${\bf addressType}$		value	
SCS	General	GEN=0	
SCS	Ambient	A=[00, 1-9, 100]	
SCS	Light Point	if	
		• $A=00 \rightarrow PL=[01-15]$	
		• $A=[1-9] \rightarrow PL=[1-9]$	
		• $A=10 \rightarrow PL=[01-15];$	
		• $A=[01-09] \rightarrow PL=[10-15]$	
SCS	Group	GR=#[1-255]	
SCS	Local bus	APL#4#interface	
		• Interface $\rightarrow$ [0-1][1-9]	



## 2.3 Function Table

## 2.3.1 What table

Function Id	Value	Params	
		$\mathbf{Set}$	On
Stop	0		
Up	1		
Down	2		
StopAdvanced	10	[ <shutterpriority>]</shutterpriority>	<shutterpriority></shutterpriority>
			<shutterType $>$
UpAdvanced	11	[ <shutterstep>]</shutterstep>	<shutterstep></shutterstep>
		[ <shutterpriority>]</shutterpriority>	<shutterpriority></shutterpriority>
			<shutterType $>$
DownAdvanced	12	[ <shutterstep>]</shutterstep>	<shutterstep></shutterstep>
		[ <shutterpriority>]</shutterpriority>	<shutterpriority></shutterpriority>
			<shuttertype></shuttertype>

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# Chapter 3

# **Communication Flow**

#### 3.0.1 Command session - Base motor actuator

#### 3.0.1.1 Stop - What = 0

Command	Open Frame
$Client \rightarrow Server$	*2*0* <where>##</where>
Server  o Client	Ack

Event Session	Open Frame	Note
Server  o Client	*2*0* <where>##</where>	if $\langle \text{where} \rangle = GR \rightarrow$
		you will have one frame
		with $\langle \text{where} \rangle = GR$
		and as many frames as
		automation objects

#### 3.0.1.2 Up - What = 1

Command	Open Frame
$Client \rightarrow Server$	*2*1* <where>##</where>
Server  o Client	Ack

Event Session	Open Frame	Note
Server  o Client	*2*1000# <what>##</what>	only if <where>=APL</where>
Server  o Client	*2*1* <where>##</where>	if $\langle \text{where} \rangle = GR \rightarrow$
		you will have one frame
		with $\langle \text{where} \rangle = GR$
		and as many frames as
		automation objects
Server  o Client	*2*0* <where>##</where>	when the shutter
		reaches the maximum
		position
		if
		<where $>$ = $GEN,A,GR$
		ightarrow you will have
		as many frames as
		automation objects

#### 3.0.1.3 Down - What = 2

Command	Open Frame
$Client \rightarrow Server$	*2*2* <where>##</where>
Server  o Client	Ack



Event Session	Open Frame	Note
Server  o Client	*2*1000# <what>##</what>	only if <where>=APL</where>
Server  o Client	*2*2* <where>##</where>	if $<$ where $>$ = $GR \rightarrow$
		you will have one frame
		with $\langle \text{where} \rangle = GR$
		and as many frames as
		automation objects
Server  o Client	*2*0* <where>##</where>	when the shutter
		reaches the minimum
		position
		if
		<where $>$ = $GEN,A,GR$
		ightarrow you will have
		as many frames as
		automation objects



#### 3.0.2 Command session - Advanced motor actuator

#### 3.0.2.1 Stop - What = 0

Command	Open Frame
$Client \rightarrow Server$	*2*0* <where>##</where>
Server  o Client	Ack

Event Session	Open Frame	Note
Server  o Client	*2*1000# <what>*<where>##</where></what>	only if <where>=APL</where>
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	if
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	<where $>$ = $GEN,A,GR$
		$\rightarrow$ you will have
		as many frames as
		automation objects
Server  o Client	*2*0* < where > ##	if
		<where $>$ = $GEN,A,GR$
		$\rightarrow$ you will have
		as many frames as
		automation objects

#### 3.0.2.2 Up - What = 1

Command	Open Frame
$Client \rightarrow Server$	*2*1* <where>##</where>
Server  o Client	Ack

Event Session	Open Frame	Note
Server  o Client	*2*1000# <what>*<where>##</where></what>	only if <where>=APL</where>
Server  o Client	*2*1* <where>##</where>	only if <where>=GR</where>
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	only if <where>=APL</where>
	<shutterPriority>* $<$ shutterInfo>##	
Server  o Client	*2*1* <where>##</where>	if
		<where $>$ = $GEN,A,GR$
		$\rightarrow$ you will have
		as many frames as
		automation objects
Server  o Client	*#2* < where > *10* < shutterStatus > * < shutterLevel > *	when the shutter
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	reaches the maximum
		position
		if
		<where $>$ = $GEN,A,GR$
		$\rightarrow$ you will have
		as many frames as
		automation objects
Server  o Client	*2*0* < where > ##	when the shutter
		reaches the maximum
		position
		if
		<where $>$ =A,GEN,GR
		$\rightarrow$ you will have
		as many frames as
		automation objects

#### 3.0.2.3 Down - What = 2



Command	Open Frame
Client $\rightarrow$	*2*2* <where>##</where>
$Server \rightarrow Client$	Ack

Event Session	Open Frame	Note
Server  o Client	*2*1000# <what>*<where>##</where></what>	only if <where>=PL</where>
Server  o Client	*2*2* <where>##</where>	only if <where>=GR</where>
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	only if <where>=PL</where>
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	
Server $\rightarrow$ Client	*2*2* <where>##</where>	if <where>=A,GEN,GR  → you will have as many frames as automation objects</where>
Server $\rightarrow$ Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>* <shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority></shutterlevel></shutterstatus></where>	when the shutter reaches the minimum position if <where>=A,GEN,GR → you will have as many frames as automation objects</where>
Server $\rightarrow$ Client	*2*0* <where>##</where>	when the shutter reaches the minimum position if <where>=A,GEN,GR → you will have as many frames as automation objects</where>

#### 3.0.2.4 StopAdvanced - What = 10

Command	Open Frame
$\text{Client} \rightarrow$	*2*10*# <shutterpriority>*<where>##</where></shutterpriority>
Server  o Client	Ack

Event Session	Open Frame	Note
Server  o Client	*2*1000#10# <shutterpriority>#<shuttertype>*<where>##</where></shuttertype></shutterpriority>	only if <where>=APL</where>
Server  o Client	*2*10# <shutterpriority>#<shuttertype>*<where>##</where></shuttertype></shutterpriority>	only if
		<where $>$ =A,GEN,GR
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	if
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	<where $>$ =A,GEN,GR
		as many frames as
		automation objects
Server  o Client	*2*0* <where>##</where>	if
		<where $>$ =A,GEN,GR
		as many frames as
		automation objects

## 3.0.2.5 UpAdvanced - What = 11

Command	Open Frame
Client $\rightarrow$	*2*11# <shutterstep>#<shutterpriority>*<where>##</where></shutterpriority></shutterstep>
Server  o Client	Ack



Event Session	Open Frame	Note
Server  o Client	*2*1000#11# <shutterpriority>#<shuttertype>*<where>##</where></shuttertype></shutterpriority>	only if <where>=APL</where>
Server  o Client	*2*11# <shutterstep>#<shutterpriority>#<shuttertype>*</shuttertype></shutterpriority></shutterstep>	only if
	<where>##</where>	<where $>$ =A,GEN,GR
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	only if
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	<where $>$ =APL,GR
		if $<$ where $>$ =GR $\rightarrow$
		as many frames as
		automation objects
Server  o Client	*2*1* <where>##</where>	only if
		<where $>$ =APL,GR
		if $<$ where $>$ = $GR \rightarrow$
		as many frames as
		automation objects
Server  o Client	*#2* <where><math>*10*</math><shutterstatus><math>*</math><shutterlevel><math>*</math></shutterlevel></shutterstatus></where>	when the shutter
	<pre><shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority></pre>	reaches the maximum
		position
		if
		<where $>$ =A,GEN,GR
		$\rightarrow$ as many frames as
G G11	hahah 1 // //	automation objects
Server $\rightarrow$ Client	*2*0* <where>##</where>	when the shutter
		reaches the maximum
		position
		if
		<where $>$ =A,GEN,GR
		$\rightarrow$ as many frames as
		automation objects

## 3.0.2.6 DownAdvanced - What = 12

Command	Open Frame
$Client \rightarrow$	*2*12# <shutterstep>#<shutterpriority>*<where>##</where></shutterpriority></shutterstep>
Server  o Client	Ack

Event Session	Open Frame	Note
Server  o Client	*2*1000#12# <shutterpriority>#<shuttertype>*<where>##</where></shuttertype></shutterpriority>	only if <where>=APL</where>
Server  o Client	*2*12# <shutterstep>#<shutterpriority>#<shuttertype>*</shuttertype></shutterpriority></shutterstep>	only if
	<where>##</where>	<where $>$ =A,GEN,GR
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	only if
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	<where $>$ =APL,GR
		if $<$ where $>$ =GR $\rightarrow$
		as many frames as
		automation objects
Server  o Client	*2*2* <where>##</where>	only if <where>=APL,</where>
		#G
		if $<$ where $>$ = $GR \rightarrow as$
		many frames as au-
		tomation objects
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	when the shutter
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	reaches the minimum
		position
		if
		<where $>$ =A,GEN,GR
		$\rightarrow$ as many frames as
		automation objects



Server  o Client	*2*0* <where>##</where>	when t	the shutter
		reaches t	he minimum
		position	
		if	
		<where>:</where>	=A,GEN,GR
		ightarrow as ma	ny frames as
		automatic	on objects



## 3.0.3 Status request

## 3.0.4 Base motor actuator

Command	Open Frame	Note
$Client \rightarrow Server$	*#2* <where>##</where>	
Server $\rightarrow$ Client	*2* <what>*<where>##</where></what>	if <where>=A,GEN,GR → you will have as many frames as automation objects</where>
$Server \to Client$	Ack	

Event Session	Open Frame	Note
Server  o Client	*2* <what>*<where>##</where></what>	if
		<where $>$ =A,GEN,GR
		ightarrow you will have
		as many frames as
		automation objects

#### 3.0.5 Advanced motor actuator

Command	Open Frame	Note
$Client \rightarrow Server$	*#2* <where>##</where>	
$Server \to Client$	*2* <what>*<where>##</where></what>	
		as many frames as automation objects
$Server \rightarrow Client$	Ack	

Event Session	Open Frame	${f Note}$
Server  o Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	if
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	<where $>$ =A,GEN,GR
		$\rightarrow$ you will have as
		many frames as light
		points
Server  o Client	*2* <what>*<where>##</where></what>	if
		<where $>$ =A,GEN,GR
		ightarrow you will have
		as many frames as
		automation objects



## 3.0.6 Dimension request

#### 3.0.6.1 ShutterStatus - Dimension = 10

Command	Open Frame	${f Note}$
$Client \rightarrow Server$	*#2* <where>*10##</where>	
Server  o Client	*#2* <where>*<shutterstatus>*<shutterlevel>*</shutterlevel></shutterstatus></where>	if
	<shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority>	<where $>$ =A,GEN,GR
		$\rightarrow$ you will have
		as many frames as
		automation objects
Server  o Client	Ack	

Event Session	Open Frame	Note
$Server \to Client$	*#2* <where>*10*<shutterstatus>*<shutterlevel>* <shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority></shutterlevel></shutterstatus></where>	if <where>=A,GEN,GR  → you will have as many frames as automation objects</where>
Server $\rightarrow$ Client	*2*0* <where>##</where>	when the shutter reaches the minimum/- maximum position if <where>=A,GEN,GR → you will have as many frames as automation objects</where>



## 3.0.7 Dimension writing

#### 3.0.7.1 GoToLevel - Dimension = 11

Command	Open Frame
$Client \rightarrow Server$	*#2* <where>*#11#<shutterpriority>*<shutterlevel>##</shutterlevel></shutterpriority></where>
Server  o Client	Ack

Event Session	Open Frame	Note
$Server \to Client$	*#2* <where>*#11#<shutterpriority>#<shutterlevel>* <shuttertype>##</shuttertype></shutterlevel></shutterpriority></where>	
Server $\rightarrow$ Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>* <shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority></shutterlevel></shutterstatus></where>	if <where>=A,GEN,GR  → you will have as many frames as automation objects</where>
Server $\rightarrow$ Client	*2* <what>*<where>##</where></what>	if $<$ where>=A,GEN,GR $\rightarrow$ you will have as many frames as automation objects
Server $\rightarrow$ Client	*#2* <where>*10*<shutterstatus>*<shutterlevel>* <shutterpriority>*<shutterinfo>##</shutterinfo></shutterpriority></shutterlevel></shutterstatus></where>	when the level has been reached if <where>=A,GEN,GR → you will have as many frames as automation objects</where>
Server $\rightarrow$ Client	*2*0* <where>##</where>	when the level has been reached if <where>=A,GEN,GR  → you will have as many frames as automation objects</where>